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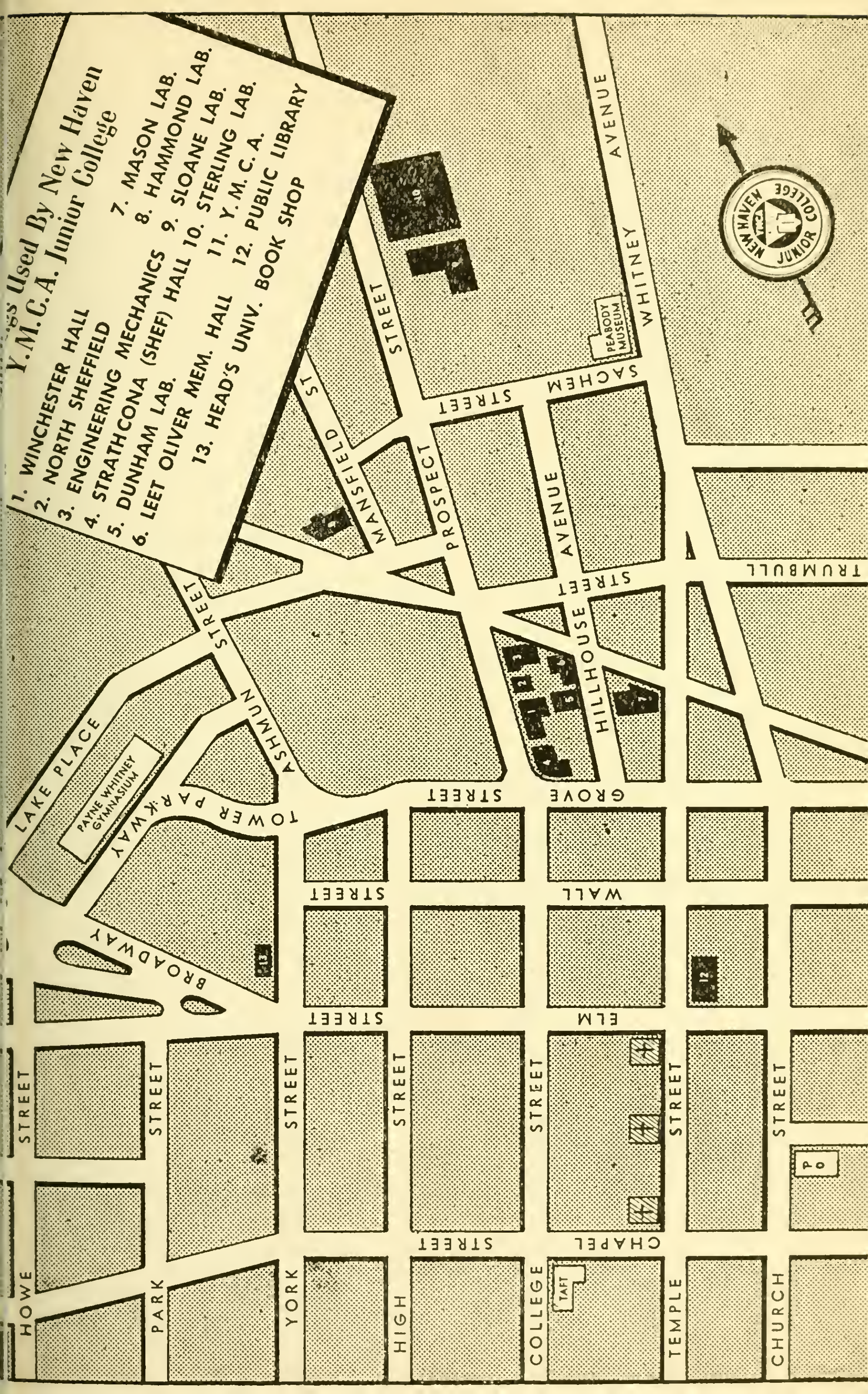
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CATALOGUE 1951-1952

NEW HAVEN YMCA JUNIOR COLLEGE

NEW HAVEN, CONNECTICUT

For Men and Women

Relations With Yale University

●

New Haven YMCA Junior College operates in Yale University as an independent community institution. Yale contributes ten buildings without charge as a part of its service to the community. These buildings include laboratories of engineering and basic sciences, libraries, lecture rooms, and administrative offices. Needless to say, the community would find it exceedingly difficult to duplicate these facilities, and without them the type of program offered by the Junior College would be impossible.

The College, however, is in every respect an independent institution chartered as a separate corporation by legislative action. Its Board of Governors is composed of representatives from industry, Yale University, the Y.M.C.A. of New Haven, the faculty and alumni of the Junior College, and the Foremen's Club of New Haven. By virtue of its independence it is free to analyze the needs of the community for collegiate education and then to organize programs of instruction most appropriate to those needs.

The many personal contributions of the faculty and administrative officers of Yale University are also of special significance to the program of instruction. In 1949-50 twenty-one members of the Yale faculty carried instructional responsibilities in the Junior College. Several others served as advisers in their specific fields. Through this cooperation on the part of men recognized as authorities in their respective fields, the Junior College is able to enter many more areas of specialization than otherwise would be possible.

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Dean, School of Engineering, Yale University

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GENERAL STATEMENT

Section 1

New Haven YMCA Junior College

•

Land Marks: 1920-1951

1920—Organized as branch of Northeastern University. Stimulated by the needs and demands of returning veterans of World War I.

1926—Incorporated as an independent college by act of the Connecticut Legislature. Established relations with Yale University whereby the University provided facilities as a contribution to the improved work of this new community institution.

1930—Movement toward planned "programs" for employed adults and away from the previous practice of offering a scattering of relatively unrelated courses. This movement, which held significant emphasis in the continuing progress of the institution, was stimulated by Ellis C. Maxcy, Director of the College from 1930 to 1937.

1938—Planned cooperation with business and industry, proved through a two-year program of experimentation, led to the appointment by companies of our 300 coordinators to act as counselors and liaison officers between the company, the College and the student-employee. From this movement toward closer cooperation the *Work-Study Program* of the College was born.

1941—The Engineering, Science, and Management War Training Program, organized through federal sponsorship and financing as an aid to war industry. This was an official program of Yale University, administered in New Haven County by the Junior College. Experience in this program revealed new areas of long-term service to this industrial community that should continue to be served by the community junior college and brought about an expanded curriculum in the regular college program.

1944—The enrollment of the first veteran of World War II. By 1947, the registration of veterans constituted 69 per cent of the total.

The development of five-year Employee Training Agreements with companies which enabled the Junior College through new and improved relations with business to adapt its programs to the post-war needs of the community. Funds from the Agreements brought new and increased leadership, new direct services to cooperating companies, and new programs of study to fit post-war needs of the community.

1948—Approved by the New England Association of Colleges and Secondary Schools.

1949—Announcement of the *Cooperative Program of Education*—alternating full-time study and full-time work by quarters. This plan, originated by the University of Cincinnati in 1906, was a natural outgrowth in New Haven of thirty years' experience in cooperation between the College, business, and industry of the community.

Purposes of the College — Education specially related to employment in the community is the major purpose of New Haven YMCA Junior College. This has been the principal objective of the College during the quarter of a century of its existence. Relationships with Yale University are based upon a mutual realization of this goal; it is for this purpose that YMCA funds, drawn from the Community Chest and other sources, are granted to the College.

Specifically, the objectives of the College are:

1. To provide education at the college level appropriate for employed persons.
2. To coordinate the college program with employment through the development of the Work-Study and Cooperative Programs.
3. To serve special community needs for education compatible with the first two objectives.
4. To attempt to achieve the maximum development of the individual through guidance, counseling, testing and placement.
5. To attempt to achieve the maximum effective development of education through advisory service to cooperating business and industry regarding training programs and college offerings.

Cooperation with Business and Industry — In order to facilitate the integration of work and study, the College attempts to develop a pattern of coöperation with the employers represented by the student group. Each employer is encouraged to appoint a Work-Study coördinator who functions as a liaison officer between the College and the employer in matters concerning the student-employee. The coördinator may be expected to assist the College in selecting students and in planning student study programs. He may provide counseling service on the job, arrange for adapting working hours to facilitate the student's study, assist the student in obtaining more nearly related work, or he may develop in-service training programs which are coördinated with College study. The exact nature of his responsibilities varies from company to company, for no set pattern of coördination is prescribed. It is the company coördinator with whom the College deals in matters requiring the coöperative efforts of the College and the employer. To the coördinator are sent periodic reports of the student's progress in his studies, unless the student has requested that such reports be withheld.

Many companies have established scholarship funds covering all or part of the tuition of student-employees. Some scholarships also cover the cost of books, fees, and transportation.

Employee Training Agreements — A group of coöperating companies are now contributing financially to the development program of the College through five-year *Employee Training Agreements.* The purposes of this development program are:

I. Course and program development.
    1. Special courses developed to meet the specific needs of one or more companies.

  2. New programs within the College of a long-term nature.
  3. Reorganization and adaptation of present programs.

II. Special work with student-employees.
  1. Placement service to the company and the student.
  2. Selection of trainees.
  3. Counseling with student-employees.
  4. Coöperative planning and coördination of work and study.

New course developments must, of course, be held for a time to a point where they can be handled adequately. Therefore, it is the policy of the College to give *priority* to student-employees of companies coöperating under Employee Training Agreements in entrance to courses of the development program: (1) for as long as is necessary to take care of qualified applicants from these coöperating companies, (2) provided such limitation is consistent with good educational practice for any given course, and (3) for as long as it is necessary to complete the development work involved in the course.

The Major Programs of the College

The offerings of the College fall into two major categories:

1. The Work-Study Programs, and
2. The Cooperative Program.

Each of these leads to the Associate in Science degree, but each has its unique features.

Because these offerings differ from each other in many respects they are separately described in later sections of the catalog, each section being appropriately labeled in order to prevent the reader from confusing the two programs.

The material immediately below and in the balance of this section of the catalog is common to both programs. For other information regarding either program, reference should be made to the appropriate section later in this catalog.

Student Personnel Services

In the interest of assisting each student to achieve his fullest development as a personality and of helping him to utilize most effectively the instruction offered, the College makes available to all students a variety of services which are his for the asking and which are, in general, under the leadership of the Director of Student Personnel.

These services include:

Counseling and Guidance
Testing
Job Placement (see pages 35 and 48)
Loans and Scholarships (see pages 16 and 24)
Recreational Activities (see pages 23 and 24)

Counseling and Guidance — All the members of the administrative staff of the College reserve all their non-teaching evening hours for counseling with students. In addition, one staff member is available to students at all hours when the college office is open. Students need only to request an appointment in order to seek information and help. By inquiring at the office, a student may learn who is most qualified to discuss his problem with him. Counseling and guidance is offered in such areas as program planning; study habits and methods; personal, marital or domestic problems; vocational selection and choice; job adjustment; relationship with Veterans Administration, the military establishments and Selective Service; and others.

Testing — Counselors, upon request, will report and interpret to students the results of their entrance tests.

The Director of Student Personnel, as a professional vocational counselor, is prepared to undertake vocational testing and counseling with students requesting this service.

Scholastic Regulations

Change of Program — A student may change his program only by obtaining the authorization of the chairman of the division of which the new program is a part. Changes should be requested well in advance of registration. No change will be honored which has not had the prior approval of the division chairman. Veterans are referred to special regulations on page 22.

Grading System — The following grading system is in use, and except where otherwise specified, applies both to examinations and to term work. The weight of a final examination grade is a matter individually determined by each instructor.

A	Superior
B	Good
C	Fair
D	Lowest passing grade
F	Failure
Inc.	Incomplete. This grade is used to indicate that a student, who has otherwise done satisfactory work, has been unable, due to extenuating circumstances, to complete work that is capable of being made up. In order to remove the "incomplete", such work must be made up before the first day of the following semester. Otherwise the "Inc." remains on the record, no credit is given for the course and it must be repeated before further work for which it is prerequisite may be taken.
Wd.	Withdrawal. This grade indicates: (1) that the student withdrew prior to the midpoint of the semester, (2) that the student's work was satisfactory at the time of withdrawal if the withdrawal was after the midpoint of the semester.
WF	This grade indicates withdrawal after midpoint in the semester with unsatisfactory work.

X This grade indicates absence from the final examination although term work is passing. When extenuating circumstances have prevented a student from taking a final examination, it must be made up before the first day of the next semester upon request and upon payment of the fee for make-up examination. If the make-up examination is not taken at the appropriate time the "X" remains on the record, no credit is given for the course, and it must be repeated before further work for which it is prerequisite may be taken.

Grade Reports — Reports of the final grade in each subject will be mailed to the student soon after the close of each semester. The same report will be mailed to employers in those instances where the student has given his approval.

Placement on Academic Probation — The academic standing of each student will be determined on the basis of his Quality Point Ratio each semester. Academic grades are given the following Quality Point values as a basis for determining the Quality Point Ratio:

A	4 Q.P.'s for each 2½ semester hours per course
B	3 Q.P.'s for each 2½ semester hours per course
C	2 Q.P.'s for each 2½ semester hours per course
D	1 Q.P. for each 2½ semester hours per course
F	0 Q.P.'s for each 2½ semester hours per course

The Quality Point Ratio will be obtained by dividing the total Quality Points each semester by the number of 2½ semester hour courses carried during the semester.

> Example: John Doe earns C in Math C-D (a five semester hour course). The value of C is 2 Q.P.'s, and a 5 semester hour course is equivalent to two 2½ semester hour courses. 2 × 2 = 4 Q.P.'s earned in Math C-D. He also earned B in English 13 (2½ semester hours). The value of B is 3, and English 13 is one 2½ semester hour course. 3 × 1 = 3 Q.P.'s earned in English 13. 4 Math Q.P.'s plus 3 English Q.P.'s = 7 Q.P.'s earned by Doe. The total program was equal to three 2½ semester hour courses. His Quality Point Ratio is therefore 7 divided by 3, or 2.3 for the semester.

The Quality Point Ratios required to be in good academic standing are as follows:

> During the first and second semester of enrollment in the College, a Quality Point Ratio of 1.5 is required.
>
> After the student is enrolled in the third semester, a Quality Point Ratio of 1.6 is required.

Failure to earn the required Quality Point Ratio in any semester will place a student on academic probation for the following semester of enrollment.

Attention is called to the fact that the minimum Quality Point Ratio of 1.6 which is required to remain in good academic standing from semester to semester is insufficient to meet the graduation requirement of a total Quality Point Ratio of 2.0. Therefore, the fact that a student may never have been on probation is no guarantee that he will meet graduation requirements.

Grades earned during a summer session will neither place a student on probation nor remove him from probation. Summer session grades will be averaged with grades earned in the next semester of enrollment and the student's status will be determined at that time.

Removal of Probation or Dismissal for Academic Deficiency—

1. A student who has been placed on probation and who does not earn the required Quality Point Ratio in the next semester will be dismissed from the division of the College in which he is enrolled.

2. A student who has twice been on probation will be dismissed from the division of the College in which he is enrolled the next time his Quality Point Ratio for any semester falls below the required minimum.

3. A student whose Quality Point Ratio in any one semester is less than 1.0 will be dismissed from the division of the College in which he is enrolled.

Readmission — Applicants for readmission to this College after a student has been dismissed, and application for admission to this College following dismissal from another college, will be considered only after the lapse of a semester and only when the student provides evidence which indicates his probable success if readmitted.

Requests for readmission should be submitted in writing to the Director of Instruction at least three weeks before the opening of the semester and should include evidence supporting the student's belief that he may succeed if readmitted.

Placement on Honors List — Students who earn a Quality Point Ratio of 3.6, or better, in any one semester will be placed on the Honors List for that semester. Determination of the Quality Point Ratio is made in the same manner as is described for placement on probation.

Academic Standard Required for Degree — In addition to meeting the specific course sequences required for graduation, a Quality Point Ratio of 2.0 for the program as a whole is required for graduation.

Degree With Honors —

A degree with honors is awarded to students who have a Quality Point Ratio of 3.33 for the entire sixty semester hours specifically required for the degree program from which they are being graduated, and who have taken all the required work at this College.

Transfer students will be awarded honor diplomas on the same Quality Point Ratio, provided, however, that their total average will be considered only when they have an honor average for studies completed at this College.

Degree With High Honors —

A degree with high honors is awarded to students who have a Quality Point Ratio of 3.6 based on the same considerations as noted above.

In determining eligibility for degrees with honors, credits earned by crediting examinations and electives in excess of those required will not be considered. The grades for any subjects which have been repeated will be the average of grades earned in those subjects.

Exceptions — The foregoing statements of policy may be modified by joint action of the Chairman of the Division, the Committee on Academic Standing and the Faculty Advisory Committee in order to allow for exceptional circumstances.

Attendance Regulations — The College does not recognize excused absences and such a thing as a "free cut" does not exist. Classes are operated on the policy that it is necessary for all students to attend all class meetings. If a class is missed, the benefits from participation in the class discussion and instruction are completely lost. No student, regardless of ability, can afford that loss.

However, it is recognized that illness, unforeseen job commitments and other reasons beyond the control of the student will make it impossible for every student to attend every class meeting. Therefore, the following regulations are in effect:

1. A student is automatically dropped from each class in which his absences exceed twenty per cent of the total class meetings per semester regardless of whether the absences are consecutive or intermittent and regardless of reason. The student, the instructor, and (in the case of veterans) the Veterans Administration are notified.

2. Before a student reaches twenty per cent absences in class he is sent a warning notice advising him of the danger of being dropped.

3. After being dropped, the student may apply to a member of the administrative staff for reinstatement, the responsibility for application being entirely his. This application, furthermore, must be immediate. The purpose of this regulation is to permit the consideration of exceptional cases, but for the majority, reinstatement will not be considered.

Veterans

New Haven YMCA Junior College is approved by the Veterans Administration for the education of veterans under the terms of both Public Law 16 (the Vocational Rehabilitation Act) and Public Law 346 (the Servicemen's Readjustment Act, commonly known as the G. I. Bill). Since the first veteran enrolled in the College in July 1944, large numbers of veterans have enrolled in the College. Currently, veterans account for nearly sixty per cent of the total enrollment.

In view of the fact that the full evening program of the College is approximately a half-time program, veterans attending evening classes have approximately twice the time for education for which they are eligible in a full time program. Those enrolled in a full time program naturally will be using their eligibility at the full rate.

Public Law 346 (GI Bill) — The Veterans Administration will defray the cost of tuition, fees, books and supplies of veterans studying at the College under the provisions of Public Law 346. In addition, subsistence allowances are payable, the amount being determined on the basis of (1) the number of semester hours of course work being carried in the College, (2) the veteran's monthly income from productive labor, and (3) the number of the veteran's dependents.

Public Law 16 — Under the provisions of P.L. 16 the Veterans Administration will assume responsibility for expenses only if the courses the veteran wishes to take at the College are related to the on-the-job-training on which he has been placed by the Veterans Administration, and only when his program of study has the approval of the Veterans Administration. A person desiring to study at the College under P.L. 16 should, at the time of registration, present the College with the proper Veterans Administration form indicating that the supplemental training at the College meets with the approval of the Veterans Administration. Unless these conditions are met, the veteran must assume financial obligations in the same way as any other student.

Change of Course — If a veteran, once having undertaken a specific program at the College, desires to change his program to a new objective, he must obtain the prior approval of the chairman of the division of the college to which he wishes to transfer, and of the Director of Student Personnel. Veterans Administration regulations permit the College to authorize only one change of course for a veteran. Additional changes must be authorized by the Veterans Administration.

Counseling — Although the Director of Student Personnel is the official designated to handle veteran's problems, each member of the administrative staff is available and prepared to discuss problems with veterans. Appointments may be made at the office of the College, Room 114, Winchester Hall.

Book, Supplies and Equipment — Each veteran will purchase the books, supplies and equipment required for the courses in which he is enrolled, and will present his receipts to the College. At the end of each semester the amount indicated by the receipts will be refunded to the veteran, provided it does not exceed the cost of such items as are regularly required by the instructor in his classes, and provided the cost does not exceed the maximum allowable by Veterans Administration regulations.

Student Activities

Student Council — A Student Council of twenty members, proportionally representative of the three Divisions of the College, is elected annually by the student body. The Council bears the responsibility for initiating, organizing and carrying through extra-curricular activities, of performing liaison functions between students and the college staff, and of participating in the activities of the National Student Association. The major work of the Council is performed through its four standing committees: Student-Faculty Relations, Social, Athletic and Orientation.

The Society for the Advancement of Management (Student Chapter) — "The Society for the Advancement of Management is the recognized professional society of management people in industry, commerce, government and education." The student chapter at the College is under the sponsorship of the New Haven Chapter of the national organization which assists in planning the activities of the student chapter and welcomes members of the student chapter to its meetings. Membership in the student chapter is open to students enrolled in the Management Division of the College and to other students whose employment is in the management area and who are carrying courses in the Management Division.

The Engineering Society — The Engineering Society of the College is chartered as a student chapter of the American Association of Engineers which has as its aims "to promote the social and economic welfare of engineers, to stimulate public service in the profession, to encourage and develop the efficiency of the engineer, and to promote unity in the profession."

The activities of the society include lectures, discussions and field trips designed to stimulate interest in the field of engineering and to supplement formal study.

Full membership is open to engineering graduates, and to undergraduates who are enrolled in second year engineering mathematics. Students who are fully matriculated as freshmen in engineering may hold associate membership.

Alumni Association — The alumni organization holds regular dinner meetings, elects a representative to the Board of Governors of the College, participates in commencement activities, and encourages academic scholarship among the students.

Athletic Activities — Under the leadership of the Student Council and the sponsorship of a member of the College staff, intramural competition is organized in basketball, bowling, baseball, golf and tennis.

Y.M.C.A. Privileges — Every male student enrolled in the College is granted free use of the facilities of New Haven Y.M.C.A. during his period of enrollment. He may participate in group sports conducted there under the supervision of a member of the College staff, or he may individually use the privileges at times convenient to him.

Each student who wishes to use the Y.M.C.A. must obtain an identification card at the College office and present it at the Y.M.C.A. After satisfying the physical examination requirements he may continue to take advantage of his privileges so long as he remains enrolled in the College.

Student Newspaper — *The News* is a monthly newspaper edited and published by the student group. Any student who so desires may volunteer his services on the newspaper staff.

Policy Board of the News — The Board is charged with the responsibility of electing the editor and associate editor of *The News;* of establishing, defining and executing policies relating to the purpose, function, coverage, circulation and the selection of articles for publication.

Membership on the board consists of three members of *The News* staff, two members of the Student Council and the faculty advisor of each of the two groups.

Social Activities — The *Open House* and *Orientation Assembly* at the opening of each semester provides an occasion for the induction of new students into the life of the College. Addresses by members of the College staff are followed by a program of entertainment including dancing and other recreational activities, and by exhibitions of physical activities of the Y.M.C.A.

Guest Night — Once each term students and faculty invite wives, husbands or friends to attend classes with them at the College and entertain them informally following class visits.

Dances — Three or four dances, informal and semi-formal, are held annually for the entire student body. An Alumni dance honoring the seniors takes place during commencement activities.

Other Social Activities include those sponsored by the various student organizations among which are the athletic banquet; the joint dinner-meetings of the Student Council with the Board of Governors and the Faculty Advisory Committee; parties held by the *News* staff, the professional societies and the students enrolled in the Cooperative Program; and the Alumni reception for members of the graduating class following commencement.

Loans, Grants, and Scholarships

Tuition Loan Fund — Gifts to the College have made possible a revolving loan fund which is administered in accordance with the policies established by the Board of Governors.

The purpose of this fund is to assist students to meet tuition costs by means of a loan of not more than fifty percent of their tuition for any one semester. No interest charge is made for this loan. Applications for assistance should be made to the Director.

Scholarships and Grants-in-Aid — A limited number of scholarships and grants-in-aid, amounting to approximately one-half of the tuition, are available each year. These are awarded by the Scholarship Committee on the basis of scholastic record, ability to profit from the program and financial need. To be eligible for a scholarship, a student is expected to have a Quality Point Ratio of 3.0 for work taken at this College. Scholastic requirements to qualify for a grant-in-aid are a Quality Point Ratio of 2.0. Application forms may be secured from the College office.

The Foremen's Club of New Haven makes available scholarships to students attending the New Haven YMCA Junior College. These scholarships are administered by the Educational Committee of the Foremen's Club under the policies established by the Club.

WORK-STUDY PROGRAM

Section 2

Calendar 1951 -1952

WORK-STUDY PROGRAM

Summer Session: 1951

Registration period closes	Saturday	June 9
Tuition due (first payment)	Saturday	June 9
Placement examinations		June 11 & 13
Classes begin	Monday	June 25
Independence Day (holiday)	Wednesday	July 4
Labor Day (holiday)	Monday	September 3
Final examinations end	Wednesday	September 12

Fall Semester

		1951
Placement examinations		August 15 & 17
Registration period closes	Wednesday	September 5
Tuition (first payment due)	Wednesday	September 5
Placement examinations		September 6 & 7
Assembly	Thursday	September 20
Classes begin	Monday	September 24
Thanksgiving (holiday)		November 22 & 23
Christmas recess begins	Saturday	December 22
		1952
Christmas recess ends 9 a.m.	Monday	January 7
Final examinations begin	Monday	January 21
Final examinations end	Monday	January 28
Recess		January 29 - February 7

Spring Semester

Registration period closes	Friday	January 18
Tuition (first payment due)	Friday	January 18
Placement examinations		January 21 & 22
Assembly	Friday	February 8
Classes begin	Friday	February 8
Washington's Birthday (holiday)	Friday	February 22
Spring recess		March 30 - April 6
Classes resume	Monday	April 7
Good Friday (holiday)	Friday	April 11
Memorial Day (holiday)	Friday	May 30
Friday Classes Meet	Monday	June 2
Final examinations begin	Tuesday	June 3
Final examinations end	Tuesday	June 10

Summer Session: 1952

Registration period closes	Saturday	June 7
Tuition due (first payment)	Saturday	June 7
Placement examinations		June 9 & 11
Classes begin	Monday	June 23
Independence Day (holiday)	Friday	July 4
Labor Day (holiday)	Monday	September 1
Final examinations end	Monday	September 8

The Work-Study Point of View

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Recognizing that education, in the broadest sense of the word, is a process confined not alone to the classroom, the program of instruction provided by the College takes notice of a student's job as well as his instructional experiences.

The College believes that work is good educational experience, but that when work experience is related to academic instruction it is better. It, therefore, contends that a student's work experiences and academic experiences should be integrated as much as is possible and feasible. It sees this integration as a means whereby the traditional barrier between the academic and the practical may be broken down. To this end the College has developed a point of view which is frequently referred to as Work-Study.

In accordance with the Work-Study point of view, the College encourages and assists its students either to seek employment which is related to their programs of study, or to pursue programs of study which are related to their present or contemplated work. This the College does because it regards the student's job as a laboratory where he may apply the knowledge he gains at the College, or from which he receives practical incentives for study in the classroom. As is to be expected, the degree of relationship between work and study will vary between companies depending on the variety of experience possible in a given company and the degree of cooperation developed between the College and the company in planning for these relationships.

It is important that the student pursue a program of work after the first year, since Work-Study is the primary purpose of the College. It has been found that, although not essential to the more elementary work of the first year, work experience is essential thereafter if the student is to progress with the general level of his classes. Dependence is placed on work experience for acquiring technical terminology, skill, and familiarity with illustrations which will be used in classes. While the degree of essential relationship between work and study may be slight in even the second year, the need progressively increases in the advanced stages of the program. The most elementary office jobs for a business student, or comparable plant jobs for an engineering student, are considered sufficiently related for the earlier part of the Work-Study program.

The placement activity of the College, described elsewhere in this bulletin, is designed primarily to implement the Work-Study idea; that is, to assist student-employees to arrange an integrated program of related work and study.

Schedule of Hours

The College offers in the evening, 7:15 to 9:30, all the courses required for any of its Work-Study Programs.

Most work-study students schedule their classes on Monday, Wednesday, and Friday evenings.

Subject Load — A student may carry from one to three subjects (2½ to 7½ semester hours) concurrently, depending upon his individual desires. The same academic standards are expected of a student regardless of the subject load he is carrying.

Programs of Study

The College offers the Associate in Science degree in each of the following programs:

1. General Studies.
2. Division of Business—Business Administration, Public Accounting, Industrial Accounting, Office Supervision and Management, and Sales and Marketing.
3. Division of Engineering — Electrical Communications, Electrical Power, Industrial Electronics, Mechanical Design, Tool Design, Metallic Materials, and General.
4. Division of Management—Personnel Supervision, Industrial Administration, and Industrial Safety.

Each of these programs is described in detail on pages 55 to 73.

Graduation Requirements

The requirements for graduation for the various student categories are as follows:

Without Advanced Standing — A student who is enrolled in any one of the programs of study without credits from another institution or without credits from another program of this College will be required to complete satisfactorily the specific subjects totaling sixty semester hours of credit, as listed in the programs as outlined on pages 55 to 73, plus such preparatory or refresher subjects as are required by the College as a result of its placement examinations. The preparatory subjects required may range from none to a maximum of the equivalent of fifteen semester hours of work in addition to the specific sixty semester hours of the student's program required for the degree.

Upon satisfactory completion of both the required preparatory subjects *and* the minimum specifically required sixty semester hours of studies in the degree program; upon recommendation of the faculty; and upon the acquisition of a 2.0 Quality Point Ratio, a student will be granted the Associate in Science degree from the division of the college of which his program is a part.

Nothing in the foregoing precludes the opportunity for a student to schedule some few elective subjects, which may supplement the subjects that are specifically required for the degree. Such additional electives, however, must bear a reasonable relationship to the student's major educational objective or to his immediate job needs; provided, however, that enrollment in supplementary electives does not unduly interrupt the sequence of required courses.

With Advanced Standing — A student who enrolls in any one of the programs of study and who has advanced credits to offer, by virtue of study in another accredited institution or by virtue of previous study in another program of this College, will present his advanced credits to the Committee on Academic Standing for evaluation. The presentation of the advanced credits to the Committee on Academic Standing will be made through the chairman of the division of the program concerned. The extent of advanced credit to be granted, as well as the sequence and outline of the required courses still to be taken, will be determined by the Committee on Academic Standing. Upon completion of these required courses, upon acquisition of a 2.0 Quality Point Ratio for all courses applicable to the degree requirements, and upon recommendation of the faculty, the degree of Associate in Science will be granted from the division of which his completed program is a part. All students who receive advanced standing by virtue of transfer of credits from other colleges will complete at least fifteen semester hours of study in this college, ten hours of which must be in the specific field of study.

Length of Programs of Study

Regular Programs — Each of the programs is planned so that it may be completed in four regular school years exclusive of summer sessions provided: (1) that the student is not required to take preparatory work; (2) that he carries a full schedule each year; (3) that he fails no courses.

If none of the above irregularities occurs, students in certain programs may be able to complete their degree requirements in three calendar years by attending three consecutive summer sessions, and three corresponding regular school years. Students desiring this procedure should consult their department chairman preceding each registration period. It should be noted that the College assumes no responsibility for a three year schedule; however, the procedure is permitted provided a suitable schedule of courses can be worked out in each of the three years and three summers.

Irregular Programs by Choice — Students may find it necessary to carry less than the full schedule of subjects. Such students may still be candidates for the degree, but will, by virtue of their carrying less than the planned program, extend the number of years required to earn the degree. Because the programs have been set up in a planned sequence, students who carry less than the full program should anticipate specific prerequisites for courses in order to avoid unnecessary delay in their programs. Further, irregular students should consult the department chairman of the program concerned at each registration period so that they may be aware of possible delays. By attending summer sessions students may find it possible to make up irregularities in their schedule. Reference is made to page 75 for description of the summer session.

Irregular Programs by Failure in Required Courses — By failing a required course a student may automatically cause his program to become irregular and thus extend the time necessary for graduation. Conferences with the department head should be held prior to each registration period in order to avoid further irregularities caused by improper scheduling. In some cases, it may be possible to make up these deficiencies by attendance at summer sessions. Reference is made to page 75 of the catalog for a description of the summer session.

Irregular Programs by Need for Preparatory Work — Students who enroll for a degree and whose placement examinations in English or Mathematics or both indicate the need of preparatory or review subjects will be required to complete the equivalent of from 2½ to 15 semester hours of subjects in addition to the sixty semester hours specifically required by their program. The student who is required to take preparatory subjects may concurrently carry college level subjects for which English or Mathematics is not prerequisite. Attendance at summer sessions may make it possible for a student to make up college work delayed by the satisfaction of preparatory requirements, or it may be possible for him to take his preparatory work in the summer. Reference is made to page 75 for a description of the summer session.

Non-Degree Students

Regular Courses — Students who do not wish to be candidates for the Associate in Science degree but who desire to study any of the regular courses offered in the programs of study, may enroll in these courses as non-degree students. Non-degree students must meet the regular admission requirements of the College and must satisfy course prerequisites. Course prerequisites may be satisfied by means of transfer of credit, by either a Crediting or Qualifying Examination, or by evidence of previous practical training. The Qualifying and Crediting Examinations are described elsewhere in the catalog. Evaluation of practical experience will be the responsibility of the division chairman concerned, who will make recommendation to the Committee on Academic Standing for final approval. Non-degree students are expected to attain the same academic standards as degree students, to pay the same tuition and other fees and to come under the regulations of the College in the same manner as degree students.

Special Courses — From time to time special courses may be offered to meet the educational, technical, or avocational needs of certain students. These courses may or may not be part of the regular curriculum of the college. They may vary from pre-college to graduate level courses, offering credit or not offering credit, and admission requirements will vary accordingly.

Non-degree students or students enrolled in special courses may matriculate as candidates for a degree under procedures outlined in the section dealing with "Graduation Requirements—With Advanced Standing" (page 29) or under procedures as outlined in "Admission Requirements", whichever is applicable.

A more detailed description of these special courses, their function and procedures will be found on page 79.

Admission Requirements

Three criteria are utilized in determining a student's eligibility for admission to the College. These are: (1) a personal interview with a member of the staff, (2) an evaluation of the student's previous educational record, and (3) an evaluation of the admission examinations.

Although the College prescribes no set pattern of high school subjects as an entrance requirement, the following outlines of high school subjects are suggested as desirable:

For admission to the Division of Business	
English	3 units
History and Social Science	2 units
Mathematics	1 unit
Additional academic subjects, not less than	4 units
Vocational subjects, not more than	5 units
	15 units

For admission to the Division of Engineering	
English	3 units
Algebra	2 units
Geometry	1 unit
Physics or Chemistry	1 unit
Additional academic subjects, not less than	5 units
Vocational subjects, not more than	3 units
	15 units

For admission to the Division of Management	
English	3 units
Algebra	1 unit
Geometry	1 unit
Additional academic subjects, not less than	5 units
Vocational subjects, not more than	5 units
	15 units

High school graduates who may not meet the suggested pattern of requirements will be considered for admission on the basis of the quality of their high school work and their academic aptitude as revealed by the psychological examination. The College honors the State High School Diploma.

Admission to the Division of Engineering is to one of three levels: Pre-Engineering, General, and Specialized. See pages 61 and 62 for a description of the levels and the requirements of each.

Admission to the Division of Management requires certain proficiencies in mathematics. For details see "Admission and Placement Examinations," pages 33 and 34.

Admission of Non-High School Graduates — Non-high school graduates who have completed two years of high school studies, whose high school records are of good quality, and who demonstrate high scholastic aptitude in the admission examinations may be admitted. Generally speaking, they will be required to schedule preparatory work in English and mathematics upon admission. However, in cases of outstanding ability and achievement as demonstrated by tests, the non-high school graduate may be permitted to enroll in courses of college level for one year. Whether the non-high school graduate is required to take preparatory work or is permitted to carry courses of college grade, he must within one year of admission qualify as a high school graduate by successfully passing the State examinations for the State High School Diploma.

State High School Diploma — Recognizing that many capable students withdraw from high school prior to graduation, the Connecticut State Department of Education provides an opportunity for these students to secure the legal equivalent of a high school diploma by means of State Equivalency Examinations.

Candidates for the State High School Diploma must: (1) be graduates of, or have the equivalent of, an eighth grade education, (2) be sixteen years of age or over, and (3) not be enrolled in a regular day high school. They must pass examinations in four areas of academic study, usually mathematics, English, general science, and social science.

The examinations are given regularly by the Bureau of Youth Services, State Department of Education, Hartford. They are also given by appointment at the Vocational Counseling Service, Inc., 321 Congress Avenue, New Haven, Connecticut.

It should be noted that the College offers preparatory work in English and mathematics only.

Admission to Advanced Courses — Students desiring to be admitted to advanced courses for which they do not have the formal prerequisites may demonstrate their ability to carry the advanced course by means of either a Qualifying Examination or a Crediting Examination. Successfully passing either type of examination will permit the student to enter the advanced course. The examinations and their purposes are described below.

Qualifying Examination — The purpose of the Qualifying Examination is to provide an opportunity for special students (those not candidates for a degree) to gain admission to the advanced course of their choice without establishing credit in prerequisite courses. The examination is generally a two-hour written examination, and no credit is established by it. Applications are made to the Director of Instruction.

Crediting Examination — The purpose of the Crediting Examination is to provide a means whereby credit may be established for a course by examination. Since it is the stated policy of the College that no student shall be required to take courses which he does not need because of previous experience or education, and since his previous experience or education may have been with a non-accredited institution or agency, or in the armed forces from which situations official transfer of credit is impossible, a student may meet course prerequisites and/or establish credit in specific courses by passing successfully a Crediting Examination in each of the courses in which he feels qualified.

Students desiring to undertake a Crediting Examination should first discuss the matter with the Director of Instruction. If it is agreed that the examination is feasible, an application card accompanied by a fee of ten dollars is submitted and the examination is then arranged.

Crediting Examination normally will consist of a three-to-four hour written examination and a one-hour oral.

At least one year's successful study must be completed at the college before credit awarded by examination will be granted officially.

Admission with Advanced Standing — Advanced standing may be granted to students who (1) present an official transcript of acceptable credit from an accredited institution of higher learning, or (2) pass a Crediting Examination.

Credit by Transfer — Credit by official transcript from an accredited institution of higher learning will be tentatively evaluated at the time of admission and credit may be granted officially upon completion of a year of successful work in the College.

Application for Admission

Application for admission should be made on or before June 9, 1951, for the summer session, on or before September 5 for the fall term, and on or before January 18 for the spring term. Those who make application after these dates will be required to pay an application fee of $5.00 instead of $3.00. The application fee is not returned if the applicant withdraws his application or fails to begin classes, but the fee is returned if the College decides not to accept the student.

Application should be made in person at 114 Winchester Hall, at which time a member of the College staff will interview the prospective student for the purpose of obtaining personal information and of tentatively outlining the student's future program.

Following the interview, and before the dates given above, the applicant must complete the necessary registration forms and pay the application fee. The registrar will then secure from the principal of the applicant's former high school a transcript of his academic record. Applicants seeking admission by transfer from another college must themselves request their former college to submit a transcript to his College. Acceptance of the applicant will be determined on a basis of the interview, an evaluation of previous academic records, and the results of a college aptitude examination. Placement of students in specific courses will be determined on a basis of the examinations given for admission.

Admission and Placement Examinations — All applicants must take the academic aptitude examination (Psychological Examination), except those who, prior to the administration of the examination, present a transcript from a recognized institution of higher education, bearing evidence of at least one year's study with average or better grades.

All applicants must take an English examination, except those who present at least five semester hours of acceptable credit in English from recognized institutions of higher education. The results of this examination may determine the student's placement in courses and sections. All students who are poorly prepared in mechanics of English will be required to pass English A (Grammar Laboratory); all who are poor in reading comprehension will be required to pass English B (Reading Laboratory). No graduation credit is granted for either course.

All applicants who wish to study mathematics or engineering must take the mathematics placement examination. The results of this test, together with other factors, will determine the placement level in the Division of Engineering (see page 61.) Students who are placed in Pre-Engineering will necessarily take a longer time to complete their program.

All applicants for admission to the Division of Management, except those who present an official transcript showing successful completion of a year's work in college mathematics are required to take the Division of Management's mathematics placement examination. Failure to qualify on this examination will necessitate the student's completing satisfactorily either one or two semesters of Management Mathematics before being permitted to register for any course beyond the first-year courses in the Division of Management. No graduation credit is given for these courses.

Acceptance of Application — Students accepted for admission will be notified of their acceptance. Each applicant is required to pay the first payment of his tuition, which amounts to $7.85 per 2½ semester hour subject. This fee is due on or before June 9, 1951, for the summer session, on or before September 5 for the fall semester and on or before January 18 for the spring semester. It will be refunded to any applicant who is not accepted.

Early application for admission is desirable inasmuch as it gives ample time in which to secure and evaluate academic records, administer entrance tests, and complete other arrangements.

Assignment to Classes — The class schedule of each new student will be prepared and available following the admission and placement examinations. No schedules will be issued to a student until he has made his first tuition payment (or submitted his Certificate of Eligibility).

Re-Registration for Second Semester Courses

Students continuing into the second semester of courses immediately subsequent to completion of the first semester are required to re-register by filling out the proper card which is obtainable at the College office. The card is due before the closing date for registration for the semester, and first tuition payment must be made (see calendar) in order to have completed re-registration. Unless students are otherwise notified, they continue with the same schedule they had in the first semester. When changes in schedule are necessitated, each student will be provided with a revised schedule.

Failure to complete re-registration by the announced dates results in a late fee of $2.00.

Re-Registration of Students Who Interrupted Their Attendance

Students who were once enrolled in the College and who are returning following a summer vacation or following withdrawal are required to re-register before the date indicated in the calendar. Class schedules assigning specific sections will be prepared by the College for each re-registrant. The schedule will be available after first tuition payment is made.

Transfer of Credit

In accordance with the usual practice among institutions of higher learning, transfer of credit from this College to another institution will be determined by the other institution in terms of the achievement and promise of the individual seeking transfer. The institution to which transfer is being made will also evaluate specific courses in terms of their length and content in relation to its specific requirements. New Haven YMCA Junior College is an accredited institution and its credits will be given consideration by the major institutions of the country in terms of the conditions outlined above.

Placement Service for Work-Study Students

The College receives requests from both students and employers for job placement services. Although the College does not conceive its function to be that of a public employment service, it is interested in and prepared to render placement service within the limitations of its purposes and resources. It acts as a medium of exchange of information between students and former students who desire placement, and employers seeking personnel. It is particularly interested in helping students find positions which require college study or which lead to positions that require such education.

How the Placement Service Operates —

1. For present or former students who are unemployed.

When a present or former student who is unemployed seeks placement, the College will notify potential employers of his availability.

2. For present or former students who are employed.

When an employed student or former student requests placement service, the College encourages the student to talk with his company coordinator concerning the possibilities within his own company. Since the College has a very close working relationship with certain companies through their participation in its development program under Employee Training Agreements, it is in an especially favorable position to discuss the student's case with the coördinators of these companies. It is only after the College is convinced that the best interests of the student will be served that it will undertake placement services for the student who is already employed.

3. In handling requests from companies.

When a company requests the College to recommend students to fill a position, it will, if possible, refer qualified students to the company after having followed the procedure outlined above. It cannot undertake to search for applicants ouside of the group who have indicated their desire for placement.

4. For students desiring placement.

A student or former student in the Business Division of the College who desires placement should call by telephone or in person to make an appointment with the Director of Instruction of the College to discuss the placement problem.

A student or former student in either the Engineering Division or the Management Division of the College should make an appointment to discuss the placement problem with a member of the Industrial Coordination Staff of the College.

5. For companies wishing to use the placement facilities of the College.

A company wishing to use the placement facilities of the College should list the job and the desired qualifications with the Director of Instruction of the College, if the job calls for a Business Division student, or with the Industrial Coordinator, if the job calls for an Engineering or Management Division student.

Tuition and Fees

●

*APPLICATION FEE Required only of students registering for the first time.	$ 3.00
LATE FEE Required of *all* students registering after close of registration period; and Required of all students, *each semester,* not making first tuition payment by designated date (See dates below).	2.00

TUITION — per 2½-semester-hour course per semester (equivalent to $12.50 per semester hour)	$31.25
STUDENT ACTIVITIES FEE—per semester	1.00
DEFERRED TUITION CHARGE—per semester	1.00
MAKE-UP EXAMINATION	5.00
CREDITING EXAMINATION	10.00
DIPLOMA FEE	10.00
*FIRST TUITION PAYMENT (See below) per 2½ sem. hrs.	7.85

Schedule of Tuition Payment Dates

Cash Plan:

Tuition and fees for spring semester are as follows:

	7½ sem. hrs.	*5 sem. hrs.*	*2½ sem. hrs.*
Due on or before September 5, January 18	$23.55*	$15.70*	$ 7.85*
Due on or before October 8, February 18	71.20***	47.80***	24.40***
	$94.75	$63.50	$32.25

Deferred Plan:

Tuition and fees are payable on the deferred plan as follows:

Fall 1951	*Spring 1952*	*7½ sem. hrs.*	*5 sem. hrs.*	*2½ sem. hrs.*
September 5	January 18	$23.55*	$15.70*	$ 7.85*
October 8	February 18	25.40**	17.60**	9.80**
November 5	March 24	23.40	15.60	7.80
December 3	April 21	23.40	15.60	7.80
		$95.75	$64.50	$33.25

Tuition and fees for Summer

Cash Plan:

	Summer 1951	*Summer 1952*	*5 sem. hrs.*	*2½ sem. hrs.*
Due on or before	June 9	June 7	$20.90*	$10.45*
Due on or before	July 9	July 7	42.60***	21.80***
			$63.50	$32.25

Deferred Plan:

Summer 1951	*Summer 1952*		
June 9	June 7	$20.90*	$10.45*
July 9	July 7	22.90**	12.45**
August 6	August 4	20.70	10.35
		$64.50	$33.25

Return of Fees and Tuition

Those who are refused admission to the College on the basis of scholastic qualifications are refunded all payments.

In the event a student withdraws from college prior to the end of the semester, his tuition charges are based on the *deferred plan.* He is charged only those payments due at the time of withdrawal. If he has paid full tuition according to the *cash plan,* he receives a refund of the difference between his cash payment and the amount due on the deferred plan.

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* Not refundable.
** Includes deferred payment charge and student activities fee.
*** Includes student activities fee.

COOPERATIVE PROGRAM

Section 3

Calendar 1951 - 1952

COOPERATIVE PROGRAM

Period 1 Early Fall 1951

Academic		*Co-operative Work*	
Group A (8 weeks)			
Last day for applications	July 2		
Registration	Aug. 13		
Tuition due	Aug. 13		
Day classes begin	Aug. 27		
Classes omitted	Sept. 4		
Evening Classes begin	Sept. 25		
Day classes end	Oct. 20		

Period 2 Late Fall 1951

Academic		*Co-operative Work*	
Group B (8 weeks)		Group A (9 weeks)	
Last day for applications	July 2		
Registration	Aug. 13		
Tuition due	Sept. 5		
Evening classes begin	Sept. 25		
Day classes begin	Oct. 22	Work schedule begins	Oct. 22
Classes omitted	Nov. 22-23		
Day classes end	Dec. 15	Work schedule ends	Dec. 24
Vacation	Dec. 15-25	Vacation	Dec. 25-Jan. 1

Period 3 Winter 1952

Academic		*Co-operative Work*	
Group A (12 weeks)		Group B (13 weeks)	
Tuition due	Jan. 2	Work schedule begins	Dec. 26
Day classes begin	Jan. 2		
Classes omitted	Feb. 22		
Day classes end	March 19	Work schedule ends	Mar. 22

Period 4 Spring 1952

Academic		*Co-operative Work*	
Group B (12 weeks)		Group A (12 weeks)	
Tuition due	Mar. 27	Work schedule begins	March 24
Day classes begin	Mar. 27		
Classes omitted	Apr. 11		
Evening classes end	June 10		
Day classes end	June 14	Cooperative work continues through next period	

Period 5 Early Summer 1952

Academic		*Co-operative Work*	
Group B (5 weeks)		Group A (5 weeks)	
Vacation	June 15-July 20	Work schedule ends	July 19

Period 6 Late Summer 1952

Academic		*Co-operative Work*	
Group A (5 weeks)		Group B (5 weeks)	
Vacation	July 20-Aug. 24	Work schedule begins	July 21

Period 1 Early Fall 1952

Academic		*Co-operative Work*	
Group A (8 weeks)		Group B (8 weeks)	
Tuition due	Aug. 11	Work schedule continued from Period 6	
Registration	Aug. 11		
Day classes begin	Aug. 25		
Classes omitted	Sept. 1		
Evening classes begin	Sept. 22		
Day classes end	Oct. 18	Work schedule ends	Oct. 18

Cooperative Calendar 1951 - 1952

	Group A							**Group B**						
1951	M	Tu	W	Th	F	S	Evening Classes Week of	M	Tu	W	Th	F	S	1951
	Period 1 (Study 8 weeks)													
Aug.	27	28	29	30	31	1	x - x							Aug.
Sept.	x	4	5	6	7	8	x - x							Sept.
	10	11	12	13	14	15	x - x							
	17	18	19	20	21	22	x - x							
	24	25	26	27	28	29	24-29							
Oct.	1	2	3	4	5	6	1- 5							Oct.
	8	9	10	11	12	13	8-12							
	15	16	17	18	19	20	15-19	Period 2 (Study 8 weeks)						
							22-26	22	23	24	25	26	27	
Nov.							29- 2	29	30	31	1	2	3	Nov.
	Period 2 (Work 9 weeks)						5- 9	5	6	7	8	9	10	
	October 22, 1951						12-16	12	13	14	15	16	17	
	through						19- x	19	20	21	x	x	24	
Dec.	December 24, 1951						26-30	26	27	28	29	30	1	Dec.
							3- 7	3	4	5	6	7	8	
							10-14	10	11	12	13	14	15	
	Period 3 (Study 12 weeks)						17-21	x	x	x	x	x	x	
		x	x	x	x	x	x - x	x	x					
1952														1952
Jan.	x	x	2	3	4	5	x - x							Jan.
	7	8	9	10	11	12	7-11	Period 3 (Work 13 weeks)						
	14	15	16	17	18	19	14-18	December 26, 1951						
	21	22	23	24	25	26	21-25	through						
Feb.	28	29	30	31	1	2	28- x	March 22, 1952						Feb.
	4	5	6	7	8	9	x- 8							
	11	12	13	14	15	16	11-15							
	18	19	20	21	x	23	18- x							
	25	26	27	28	29	1	25- 9							
March	3	4	5	6	7	8	3- 7							March
	10	11	12	13	14	15	10-14							
	17	18	19	x	x	x	17-21	Period 4 (Study 12 weeks)						
							24-28	x	x	x	27	28	29	
April							x - x	31	1	2	3	4	5	April
	Periods 4 and 5 (Work 17 weeks)						7- x	7	8	9	10	x	12	
							14-18	14	15	16	17	18	19	
	March 24, 1952						21-25	21	22	23	24	25	26	
May	throught						28- 2	28	29	30	1	2	3	May
	July 19, 1952						5- 9	5	6	7	8	9	10	
							12-16	12	13	14	15	16	17	
							19-23	19	20	21	22	23	24	
							26- x	26	27	28	29	x	31	
June							2- 6	2	3	4	5	6	7	June
							9- x	9	10	11	12	13	14	
	Period 6 (Vacation 5 weeks)							Period 5 (Vacation 5 weeks)						
	July 21, 1952							June 15, 1952						
	through							through						
	August 24, 1952							July 20, 1952						
	Period 1 (Study 8 weeks)							Period 6 and 1 (Work 14 weeks)						
	August 25, 1952						Begin	July 21, 1952						
	through						Sept 22	through						
	October 18, 1952						1952	October 18, 1952						

The Cooperative Point of View

The College realizes that work experience is a part of the learning experience, and provides in its program an opportunity for the student to explore various job situations. When a student is put into a work situation, he gains learning there that will supplement and complement his classroom learning. There is also the maturing influence of the opportunity to work with working people. As yet, there is no classroom substitute for the practical knowledge derived from experiences of the day-to-day problems on the job. The experience gained from the cooperative jobs—doing different types of work and discovering the working conditions on these jobs—assists the student in choosing a field for his life's work.

Through the College's experience in coordinating the work and study of student-employees in its evening work-study program, it recognizes the desirability of developing young men and women who will enter business or industry with more than narrow technical skills. Companies look for future leaders with a background broad enough to prepare them to cope with the increasingly complex economic and social problems of business today. The Cooperative Program of studies is designed to meet this need. Its curriculum provides subjects that develop the individual both intellectually and socially. It also provides the technical education necessary for entry jobs in business and industry.

The Cooperative Plan of the College recognizes the fact that many young men and women desire to spend their first two years of college at home and then go on to a senior college. Provision is made in the program for these students to gain fundamental preparation for later transfer to a senior college.

The Cooperative Program — It is a coeducational program offering alternate periods of study and work through two years. The operation of the Cooperative Plan provides that half of the student body is in college studying at one time while the other half is on a cooperative job in business or industry.

The year is divided into four periods. Periods One and Two, between Labor Day and Christmas, are each eight weeks in length and offer the same classes. Periods Three and Four, between New Years Day and the middle of June, are each twelve weeks in length and offer the same classes. Half the student body studies in Periods One and Three and works in the other two periods. The other half of the student body studies in Periods Two and Four and works in the other two periods. Students divide the ten-week summer vacation, the two-week Christmas vacation, and the one-week spring vacation.

Graduation Requirements

The Associate of Science degree is granted upon

1. Completion of the minimum of sixty semester hours of study.
2. Successful performance on cooperative job assignments.

3. Acquisition of a 2.0 average Quality Point Ratio.
4. Recommendation of the faculty.

A student who wishes to enroll in the Cooperative Program with advanced standing by virtue of previous study in another program of this College or in some other accredited college must present his advanced credits for evaluation by the Committee on Academic Standing. The extent of advanced credit, as well as the sequence and outline of the required courses still to be taken, will be determined by the Committee. All students who receive advanced standing through transfer credit must complete at least thirty semester hours of study in the Cooperative Program.

PROGRAM OF STUDIES

Since the aim of the Cooperative Program is to prepare students to live a rich and satisfying life, a major part of which involves earning a living, the studies are built around a group of basic courses with an opportunity to undertake specialized study according to the individual's interests. A student may elect to pursue study in the fields of Business, Industrial Management, Engineering or General Studies. In order to allow flexibility in scheduling the courses, each student's program will be worked out in conference with his college advisor. The following programs are outlined to give examples of how various schedules may be planned. All students are required to take Orientation, Coordination and Physical Training on a non-credit basis.

Business

Students who are interested in the field of business have a wide selection of technical courses to choose from. In addition to the technical business subjects, each student will spend the work period on a cooperative training job in various fields of business activity. This will serve to supplement classroom studies and also to acquaint the student with the opportunities that exist in this particular phase of business. The following programs are illustrations of typical plans of studies:

ACCOUNTING

First Year	Second Year
~~Accounting (A11-12)~~	~~Accounting (A-21-22) or~~ Cost Accounting (A 23-24)
English (E13-14C)	Economics (EC 21-22C)
Survey of Business and Industry (IA 13-14C)	English (E 25-26C)
Sociology (Soc 15-16C)	Political Science (Pol Sc 21-22C)
General Psychology (P 13-14C)	Applied Psychology (P 25-26C)
Biological Science (Sc 13-14C)	Physical Science (Sc 21-22C)

Suggested Co-op Training Jobs—Bookkeeping and Accounting Clerk
Billing Clerk
General Office Assistant
Inventory Clerk
General Factory Work

SALES AND MARKETING

First Year	Second Year
Principles of Selling (SM 11-12)	Marketing & Market Analysis (SM 23-24)
Survey of Business and Industry (IA 13-14C)	or Advertising and Sales Promotion (SM 33-34)
English (E 13-14C)	English (E 25-26C)
Sociology (Soc 15-16C)	Economics (Ec 21-22C)
General Psychology (P 13-14C)	Political Science (Pol Sc 21-22C)
Biological Science (Sc 13-14C)	Applied Psychology (P 25-26C)
	Physical Science (Sc 21-22C)

Suggested Co-op Training Jobs—Sales Clerk (Retail)
General Office Assistant in a Sales Office
Radio and Newspaper Work

BUSINESS ADMINISTRATION

First Year	Second Year
Business Finance (BA 21-22) or Accounting (A 11-12)	Law of Contracts and Business Associations (L 11-12)
Survey of Business and Industry (IA 13-14C)	Economics (Ec 21-22C)
English (E 13-14C)	English (E 25-26C)
Sociology (Soc 15-16C)	Political Science (Pol Sc 21-22C)
General Psychology (P 13-14C)	Applied Psychology (P 25-26C)
Biological Science (Sc 13-14C)	Physical Science (Sc 21-22C)

Suggested Co-op Training Jobs—General Office Assistant
Production Worker
Inventory Clerk
Shipping or Receiving Clerk
Stockroom Assistant
General Factory Work

Programs may also be arranged including study of the following specialized fields:
Office Organization and Management
Public Relations
Journalism

Engineering

The concept of cooperative education originated in the education of engineers and the plan has proved very successful in the engineering field. There are several course combinations that may be worked out for students who are interested mainly in Engineering. Individual conferences with the student will determine the most suitable courses to be taken depending on the student's objective. The three following programs are suggested as typical schedules for the engineering student:

PLAN I

First Year	Second Year
Engineering Mathematics (M 13-14)	Engineering Mathematics (M 21-22)
Engineering Drawing (D 11-12)	Engineering Physics (Ph 11-12)
English (E 13-14C)	English (E 25-26C)
Survey of Business and Industry (IA 13-14C)	Economics (Ec 21-22C)
Sociology (Soc 15-16C)	Political Science (Pol Sc 21-22C)
General Psychology (P 13-14C)	Applied Psychology (P 25-26C)

PLAN II

First Year

Engineering Physics (Ph 11-12)
Engineering Drawing (D 11-12)
English (E 13-14C)
Survey of Business and Industry (IA 13-14C)
Sociology (Soc 15-16C)
General Psychology (P 13-14C)

Second Year

Engineering Mathematics (M 13-14)
Introduction to Design (D 21)
Electrical Survey (EE 22)
English (E 25-26C)
Economics (Ec 21-22C)
Political Science (Pol Sc 21-22C)
Applied Psychology (P 25-26C)

PLAN III

First Year

Engineering Mathematics (M 13-14)
Engineering Physics (Ph 11-12)
Engineering Drawing (D 11-12)
English (E 13-14)
Sociology (Soc 15-16C)
General Psychology (P 13-14C)

Second Year

Electric & Magnetic Circuits (EE 23-24)
Engineering Mathematics (M 21-22)
English (E 25-26C)
Economics (Ec 21-22C)
Political Science (Pol Sc 25-26C)
Applied Psychology (P 25-26C)

Typical Cooperative Jobs for Engineering Students:

Draftsman
Machine Operators
Assembly Operators
Engineering Assistants
Expediters
Tracers
Tool Room Assistants

Industrial Management

Since World War II there have been rapidly expanding opportunities in methods engineering, motion and time study, industrial safety, personnel and labor relations and production control. This has created a whole new area of work that lies between technical engineering and production jobs. In order to meet this demand three programs have been developed at the College. In each program the student supplements his classroom study by actual job experience in industry. This experience is valuable in commanding a good position upon graduation.

INDUSTRIAL ADMINISTRATION

This program is designed primarily for persons whose interests are in the manufacturing processes of industry. The courses of study are to develop potential young men for Methods Engineering, Production Control, Motion and Time Study or Quality Control.

First Year

Methods and Costs (Ps 21)
Production Control (LA 32)
Survey of Business and Industry (IA 13-14C)
English (E 13-14C)
Sociology (Soc 15-16C)
General Psychology (P 13-14C)
Biological Science (Sol 13-14C)

Second Year

Methods Engineering (IA 41-42) or
Management Statistics (IA 35)
and Quality Control (IA 36)
Economics (Ec 21-22C)
English (E 25-26C)
Political Science (Pol Sc 21-22C)
Applied Psychology (P 25-26C)
Physical Science (Sc 21-22C)

PERSONNEL ADMINISTRATION

The Personnel Administration Program is designed for the students interested in fields of managing personnel.

First Year

Personnel Administration (PS 23-24)
Survey of Business and Industry (IA 13-14C)
English (E 13-14C)
Sociology (Soc 15-16C)
General Psychology (P 13-14C)
Biological Science (Sc 13-14C)

Second Year

Management Labor Relations (PS 21)
Conference Leadership (PS 42) or Fundamental of Supervision (PS 22)
English (E 25-26C)
Economics (Ec 21-22C)
Political Science (Pol Sc 21-22C)
Applied Psychology (P 25-26C)
Physical Science (Sc 21-22C)

INDUSTRIAL SAFETY

The College has been one of the pioneers in Industrial Safety education. In this option the student may secure an understanding and appreciation of the fundamentals of safety, the scientific analysis of safety problems, a study of methods improvement to eliminate hazards, and some research and creative work in accident prevention.

First Year

Industrial Safety (S 11-12)
Survey of Business and Industry (IA 13-14C)
English (E 13-14C)
Sociology (Soc 15-16C)
General Psychology (P 13-14C)
Biological Science (Sc 13-14C)

Second Year

Advanced Industrial Safety (S 21-22)
English (E 25-26C)
Economics (Ec 21-22C)
Political Science (Pol Sc 21-22C)
Applied Psychology (P 25-26C)
Physical Science (Sc 21-22C)

Typical Cooperative Jobs for Industrial Management Students:

Time Study Clerk
Expediter-"Stockchaser"
Junior Safety Engineer (Trainee)
Machine Operator
Personnel Records Clerk
Assembly Operator

General Studies

Many students desire to follow a completely general studies curriculum, either in order to transfer to a liberal arts college or in cases where the student hasn't decided on any area for specialization. Therefore in the general studies program each student is allowed a wide range of elective subjects from which to choose. The cooperative work experience is especially valuable to young men and women in this program. It gives them an opportunity to sample various types of occupations and work experiences and will assist them in selecting a career or in planning further studies. A typical plan of studies is listed below:

First Year

English (E 13-14C)
Survey of Business and Industry (IA 13-14C)
Sociology (Soc 15-16C)
General Psychology (P 13-14C)
Biological Science (Sc 13-14C)
*Philosophy (Phil 11)
*Modern Literature (E 18)

Second Year

English (E 25-26)
Economics (Ec 21-22C)
Political Science (Pol Sc 21-22C)
Applied Psychology (P 25-26C)
Physical Science (Sc 21-22C)
*Creative Writing (E 23-24C)

* In the place of these subjects a student may elect Mathematics, Chemistry, Seminar in Writing or a combination of electives selected from the three other divisions of Business, Engineering or Management. (Certain subjects require the satisfaction of prerequisites before they may be taken.)

The Study Period

During the study period classes are held in the buildings of the Sheffield Scientific School of Yale University, in the Prospect Street area. Physical Education and recreational activities are scheduled at the Y.M.C.A. In order to permit as much freedom as possible in planning their programs, students are permitted to select technical courses from the broad offerings in the evening Divisions of Business, Engineering and Management. The evening subject meets from 7:15 to 9:30 p.m. on either Monday, Wednesday or Friday. It should be noted that the evening subject, if elected, meets continuously from September through June regardless of whether the cooperative period is a study or a work period. During each study quarter, some academic work is assigned to be completed during the work period.

The Work Period

Before the beginning of the work period, each student consults with his college coordinator regarding his job assignment for the work period. (For further details see the section on coordination and job placement.) Once the job assignment is made, it is expected that the student will remain on the job throughout the whole work period. The college coordinator is available to discuss any questions or problems that arise on the job. The additional academic work assigned during the study period will be completed by the end of the work period.

Typical Cooperative Jobs — Listed below are a few typical jobs on which cooperative students might be placed:

- Simple assembly operator
- Bookkeeping and accounting clerk
- Time-study clerk
- Expediter—"stockchaser"
- Draftsman
- Office boy and girl
- Sales clerk
- File clerk
- Messenger

Work Schedule — On the job, the work week will be determined by the individual company. Students are expected to conform to the same rules and regulations as the regular employees.

Cooperative Work Record — At the end of each work period the cooperating company furnishes a written evaluation of the student's performance on the job. This is used as an aid in future job placement and in counseling the student.

Location of Work — The majority of jobs are in the New Haven Area. However, in some cases, it is possible to arrange work in the student's own locality. Due to the extra planning involved, a student desiring to work near his home should submit his application as early as possible.

Earnings — The student receives the "going" rate of the job to which he is assigned. Although it is expected that earnings during the work periods should be more than sufficient to cover the tuition costs of the program, the applicant should be prepared to meet the initial costs. A conservative estimate of the average Co-op student's annual earnings would be between $600 and $800.

Admission Requirements

Because of the unique nature of the Cooperative Program, its admission requirements differ in certain respects from those of the Work-Study Program. An applicant for the Cooperative Program

1. Must be a high school graduate or have earned a State High School Diploma;
2. Must not have attended full-time college for more than one year prior to applying for the Cooperative Program;
3. Must not have had more than two years of full-time work experience;
4. Must meet the standards of the College in respect to high school average;
5. Must meet the standards of the College in respect to admission examinations;
6. Must be physically fit for undertaking both employment and study.

Although the College prescribes no set pattern of high school subjects as entrance requirements, the high school subjects given on page 31 are considered desirable.

Application For Admission

Before making formal application for admission to the Cooperative Program, prospective students may obtain an interview with a member of the staff by writing or phoning the college office. Such an interview in no way commits the student nor does it constitute an application.

Formal application for admission to the Cooperative Program is made by requesting an *Application for the Cooperative Program*. Application for fall admission should be submitted before July 2. Registration in this program is limited; therefore, applications submitted after July 2 will be considered only if the quota has not already been filled.

An application fee of $15.00 must accompany the application. The entire amount of this fee will be credited to tuition charges for those who are accepted and undertake the program. Ten dollars of the fee will be refunded to applicants who withdraw their applications prior to taking any of the admission examinations, and to any applicant who is not accepted by the College. Otherwise, the fee is not refundable.

Admission and Placement — All applicants for the Cooperative Program are required to take admission and placement examinations. They will be notified of the time and place of the examinations following receipt of their application by the College.

In addition to the examinations which are described on pages 33 and 34 each applicant is given two tests which are used as a basis for subsequent counseling.

These examinations, together with the previous school record, provide the basis for determining the acceptability of the applicant and the level of English and mathematics which he will be required to schedule.

Interview — After the result of the examinations are known, the applicant may be requested to come to the College to be interviewed. The purpose of this interview is threefold:

1. To discuss the results of the examinations.
2. To outline tentatively the courses to be taken.
3. To discuss the employment aspect of the program.

Acceptance of Application — After the above procedures have been completed, each applicant is notified by letter of his acceptance or rejection. The applicant confirms his intention to undertake the program by returning to the College the *Acknowledgment of Acceptance Form,* and an acceptance fee of $25.00. This fee, as well as the application fee, is credited toward tuition charges for those who undertake the program. However, it is *not* refundable.

Registration — Applicants accepted for the term beginning in October register on the registration date given in the Calendar of the Cooperative Program. (See page 38.) Those accepted for other admission periods are notified of their registration date. At registration, forms are completed, the balance of the tuition charges for one semester are paid, and the student is provided with a class schedule and book list.

Transfer of Credit

In order to meet the needs of students who wish to spend their first two years of college in their own community and then go on to a senior college, the curriculum of the Cooperative Program is designed to facilitate transfer of credit to a higher institution. Transfer of credit to another college, in accordance with the usual practice among institutions of higher learning, will be determined by the other college in terms of the achievement and promise of the individual seeking transfer. The institution to which transfer is being made will also evaluate the length and content of the courses in the Cooperative Program in relation to its specific requirements. The New Haven YMCA Junior College is accredited by the Connecticut State Department of Education and is a member of the New England Association of Colleges and Secondary Schools, the New England regional association, membership in which is the criterion for acceptance of academic credit in colleges throughout the nation.

Scholastic Regulations

Subject Load — The full program of studies for a cooperative student is 15 semester hours per semester (6 courses) plus Physical Education, Orientation and Coordination. The minimum program he may carry is 12½ semester hours (5 courses).

In order to be graduated within two years, it is necessary that the student carry a full program of courses for 15 semester hours of credit each semester. Non-credit courses required to make up deficiencies, or courses repeated as a consequence of withdrawing or failing, extend to more than two years the period required to earn the degree. Courses required beyond the two years are charged for at the rates given in the table of tuition charges for the Work-Study Program, page 36.

Grade Reports — Interim grade reports are given to the students at the end of each study quarter. Final grades on which credit will be granted and scholastic standing determined are given at the end of each work quarter which follows a study quarter.

Other Scholastic Regulations — Other scholastic regulations for cooperative students are the same as those for the work-study students, as described on pages 18 to 21.

Relations with Cooperating Companies

In general, students in the Cooperative Plan are treated by the employer as regular employees. They are expected to perform in their jobs as effectively as any regular employee in a beginning job. However, the cooperative plan student is not a permanent employee. The College's part in the relationship between student and cooperating company is

1. To screen all applicants and furnish those most nearly meeting the company's specifications,
2. To see that an alternating employee is available to the company when the student on the job returns to the College for his next study period,
3. To conduct coordination classes to facilitate the student's adjustment to what his employer expects,
4. To follow up with company representatives and the student on the job to develop the most satisfactory cooperative relations for the individual company and student.

In turn, the employer's part in the Cooperative Program is

1. To hire a cooperative student with the expectation of releasing him for the succeeding study period,
2. To request, if he desires, that the same student return for additional work periods, or that an employed student be replaced,
3. To consult with the college coordinator concerning any contemplated change in employment status,
4. To pay the regular rate of pay for the job,
5. To give the College an appraisal of the student's performance on the job.

Job Placement and Coordination

Once an applicant for the Cooperative Program is found to be acceptable under the standards of admission to college study, the College attempts immediately to place the applicant in the business life of the community. He is assigned to one of two groups of students who alternate quarterly in work and study. He agrees that once placed in a job, he will not leave the job on his own initiative nor attempt to change his employment status without consultation with his college coordinator. He receives the "going rate" of the job to which he is assigned. A student placed on a cooperative job may "earn his way," though that is not the primary objective of the program.

Placement is a learning process in itself. A job is a "privilege," not a "right." Most adults spend at least one-half of their waking hours in the job environment. The purpose of placement during college attendance is to relate study to such an environment. The applicant is assisted in placement, but he himself holds the key to success or failure. Employers will employ students to perform tasks for which they are qualified provided there are mutual advantages to be gained from such employment.

In his interviews with company coordinators representing prospective employers, the characteristics and qualifications of each student applicant are in competition with those of another job applicant. Such things as personal appearance, cleanliness, grooming, habits of speech, and other personality traits and attitudes are considered along with previous education and the results of entrance tests.

The employer expects a college man or woman in a cooperative program to do better than an average employee on an average job. He expects interest, enthusiasm, loyalty, intelligence, judgment and responsibility. He is looking for potentialities for permanent openings which may be available to those who have completed their programs and have received their degrees. Naturally, a student in the Cooperative Program should reciprocate the cooperation of the employer and display a willingness to learn in his dealings with all his associates in the work environment. It may be seen that the college cannot "guarantee" this enriched experience to every student, but it does guarantee its best efforts to make such experience possible.

In over twenty-five years of cooperative relations with the College, employers have found that students of the College do fulfill their expectations. As a result of this experience a sufficient number of employers have promised jobs to employable students. The College screens all applicants in terms of employability as judged by recognized tests and by interviews based on industrial practice. It limits enrollment in the program. It conducts coordination meetings to facilitate adjustment to what employers expect. It tries to match the student's interest and abilities to the employer's requirements, and it works with company representatives and the student on the job to develop the most satisfactory cooperative relationship for all concerned.

It is inevitable, however, that, in certain cases, successful placement in satisfactory cooperative employment may be delayed by prevailing business conditions or for reasons peculiar to the individual case. In such a situation, the student may begin his study quarter without placement for the following work quarter; then if his work adjustment is still delayed, he continues his coordination meeting during the work quarter and completes his academic credit under the guidance of his college counselor. Should placement be unattainable for the second consecutive work period, the student may complete credit for a college year, but would then be advised to discontinue the Cooperative Program.

Each student placed in a cooperative job is closely supervised by a coordinator to whom he has been assigned. The coordinators visit employers regularly. Coordination meetings are held with groups of students at such intervals as the occasion demands. A student may seek a conference with his coordinator at any time, but to avoid job interruption he should make an appointment in advance for an evening hour during the work period.

Cooperative Work Reports — A beginner on any job is handicapped by a lack of knowledge of the work environment, of the essentials of the job, of the use of equipment, of what is expected of him by other personnel, and of methods of doing business. To learn of these things should be the first objective of a new employee. Students in the Cooperative Program when placed on new jobs will be expected to adjust as quickly as possible and to write a report of their observations. The student must remember, of course, that his primary obligation to his employer is the performance of those tasks for which he was hired, and most certainly the requirement of a report of the learning process does not call for delving into or reporting anything of a confidential nature concerning the employer's business.

Tuition and Fees

COOPERATIVE PROGRAM

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Application Fee — The application fee is $15.00. If for any reason the applicant withdraws his application before entrance examinations have been administered to him, or if the applicant is not accepted, $10.00 will be refunded. If the applicant is accepted and subsequently registers in the College, the $15.00 will be credited toward his tuition. However, no refund will be made for withdrawal of the application once the entrance examinations have been taken by the applicant.

Acceptance Fee — The acceptance fee is $25.00. It is payable when the applicant who has been accepted by the College acknowledges his acceptance and confirms his intention of undertaking the Program. The fee is applied to tuition charges. It is *not* refundable.

Tuition — Tuition is $425.00 a year, payable in two payments of $212.50 each, as specified in the schedule below. The application and acceptance fees will be applied to the first tuition payment.

Schedule of Tuition Payment Dates

GROUP A:
- $212.50 – August 13, 1951
- $212.50 – January 2, 1952

GROUP B:
- $212.50 – September 5, 1951
- $212.50 – March 27, 1952

Refunds — No refund of tuition payments will be made for withdrawal from either the work or study program, or for reduction in the study schedule.

Deferred Payments — In exceptional cases, arrangements for deferred payments may be made through the college office.

DIVISIONS OF STUDY

General Studies
Division of Business
Division of Engineering
Division of Management

Section 4

General Studies

●

Staff Member in Charge: M. K. Peterson

It is recognized that there are certain groups of students who desire a general education. These students may be catagorized as follows:

1. Those who wish a college degree in the field of general studies, but who do not desire to spend four years in a senior college.
2. Those who have not yet decided which technical field they want to specialize in, but who, in the meantime, desire to procure an education of a general nature.
3. Those who want a general education and degree at junior college level for later transfer to a senior college for the procurement of a bachelor's degree.
4. Those college graduates of technical programs who now find that their need lies in the field of general studies and the corresponding acquisition of educational breadth.

The College is meeting the needs of these students by offering the program outlined below. The degree of Associate in Science is awarded upon the successful completion of the requirements. A total of sixty semester hours of study is required, and it is expected that this will involve a minimum of three years for completion or a normal time requirement of four years, both being concerned with part-time study. The former will involve attendance at summer sessions, while the latter will be concerned with attendance during the regular school year only (September to June).

Subject	*Semester hours*
English (Speaking & Writing)	5
Literature (Modern)	2½
Philosophy	2½
Psychology	5
Economics	5
Sociology	5
Science	5
*Electives	30
Total Hours Required	60

* Additional courses from any of the above fields and/or from other fields of interest to student. See pages 81 to 96 for descriptions of the courses.

Division of Business

The Division of Business offers five major programs leading to the degree of Associate in Science. These programs are: Business Administration, Public Accounting, Industrial Accounting, Office Supervision and Management, and Sales and Marketing. Complete descriptions of each of these programs in the Division of Business will be found on pages 56 to 60.

Students not desiring to take a complete program leading to the Associate in Science degree may study individual courses within any of the programs. Courses having prerequisites must, however, have those prerequisites satisfied before such students are permitted entrance to them. Satisfaction of these prerequisites may be in the form of previous formal educational training, evidence of commensurate practical experience, or by means of a qualifying examination.

Instruction in the major subjects of business activity is carried on by personnel actively engaged in their respective fields. Thus a large degree of practicability, as well as theory, is present in all programs. In addition, classroom situations and standards of achievement are those commensurate with the business world.

The sequence of courses in all five programs of the Business Division is arranged so that a marketable degree of technical training is acquired at the end of each year. In other words, a student should be able to take jobs requiring variable degrees of training at the end of each year beginning with the first. He does not have to wait until the completion of his program before considering himself employable in his chosen field.

Business Administration

Division and Program Chairman—M. K. Peterson

The program in Business Administration offers an opportunity to study principles of business administration in a broad and systematic manner. Those students who have not yet made a specific choice in the field of business will find the first year of this program adaptable to any of the other programs in the Division of Business should they desire to change to one of those programs after the first year. The student who is in a business of his own or who will become the administrative head of a business will find the broad treatment of business subjects commensurate with his desires. The student who is employed by a business or industry in a general administrative capacity has an opportunity for preparation for advancement to a junior executive position within that business.

The selection of elective courses in the latter part of the program serves two purposes. The student may elect to broaden his education by the choice of courses remote from the field of business or he may elect to specialize in accounting, personnel management, industrial organization, sales, office management, etc.

The Seminar presents an opportunity for individual research and study. Exchange of thoughts and ideas with other students in the seminar and with the instructor provides an approach to the solution of the problem from different points of view.

YEAR	SEMESTER	FOUR YEAR PROGRAM
1	Fall and Spring	Introductory Accounting (A 11-12) Psychology (P 23-24) English (E 13-14)
	Summer	
2	Fall and Spring	Modern Civilization (Soc 13-14) Business Finance (BA 21-22) Modern Science (S 11-12)
	Summer	
3	Fall and Spring	Law of Contracts and Business Associations (L 11-12) Public Relations (BA 31-32) Economics (Ec 33-34)
	Summer	
4	Fall and Spring	Seminar (BA 41-42) Elective Elective

Public Accounting

Division Chairman—M. K. Peterson Program Chairman—F. F. Fischer

The program in Public Accounting has as its primary objective the preparation of the student for a career in public accounting, either as an employee of a public accounting firm or for individual private practice. The student has the opportunity to satisfy the educational requirements and preparation necessary for the taking of the CPA examinations (Connecticut). If the three-year apprenticeship training with a public accountant (necessary for eligibility to take the CPA examination) is taken simultaneously with his educational training, the student is ready to take the CPA examination immediately after graduation.

Those students who do not wish to enter the public accounting field will find themselves adequately prepared for general accounting positions in business or industry. Provision for an elective course in the senior year permits the student to acquire further training in any specific field.

Assuming no previous training in accounting prior to entering the program, the student in his second year will be prepared to take beginning accounting jobs in public accounting, business, or industry. It is not necessary for the student to wait until graduation in order to begin his practical accounting career.

YEAR	SEMESTER	FOUR YEAR PROGRAM
1	Fall and Spring	Introductory Accounting (A 11-12) Law of Contracts and Business Associations (L 11-12) English (E 13-14)
	Summer	
2	Fall and Spring	Modern Civilization (Soc 13-14) Intermediate Accounting (A 21-22) Cost Accounting (A 23-24) *
	Summer	
3	Fall and Spring	[1]Law of Sales (L 21) * [2]Law of Commercial Paper (L 22) * Advanced Accounting (A 31-32) Auditing (A 33-34) *
	Summer	
4	Fall and Spring	Income Tax Procedure (A 41-42) Economics (Ec 33-34) Elective

[1] Fall only. [2] Spring only.

*Offered in alternate years. See course description.

Industrial Accounting

Division Chairman—M. K. Peterson Program Chairman—F. F. Fischer

The program in Industrial Accounting is designed for those students of accounting who wish to specialize in cost work. It is for the student who is or who will be employed by an industry in its cost accounting department. As a corollary to his cost and general accounting training, the student is introduced to the principles of factory operation and production methods so that he will be better able to seek out and understand and then apply cost factors of a given product in the determination of its cost and selling value.

Adequate provision is made for electives in this program. The student may elect to study additional accounting courses in order to prepare himself for positions in the general accounting department of the industry as well as the cost department, or he may elect subjects in the fields of management and supervision or any other specific field in which he has an interest. Finally, his choice of electives may include subjects such as science and mathematics. In the choice of an elective subject, the student is limited only by his ability to qualify for that given subject in view of previous educational or practical experience.

As in Public Accounting, the student is prepared to take a position in industry at the beginning of his second year.

YEAR	SEMESTER	FOUR YEAR PROGRAM
1	Fall and Spring	Introductory Accounting (A 11-12) English (E 13-14) Industrial Organization and Management (IA 11-12)
	Summer	
2	Fall and Spring	[1]Mechanical Processes (EM 23) [2]Engineering Materials (EM 26) Intermediate Accounting (A 21-22) Cost Accounting (A 23-24) *
	Summer	
3	Fall and Spring	[1]Methods and Costs (PS 21) [2]Fundamentals of Supervision (PS 22) or [1]†Management Statistics (IA 35) [2]Quality Control (IA 36) Modern Civilization (Soc 13-14) Advanced Accounting (A 31-32)
	Summer	
4	Fall and Spring	Economics (Ec 33-34) Elective Elective

† Students anticipating the election of Management Statistics should acquaint themselves with the prerequisites as found on page 33. [1] Fall only. [2] Spring only.

* Offered in alternate years. See course description.

Sales and Marketing

Division Chairman—M. K. Peterson Program Chairman—R. V. Bennett

The program in Sales and Marketing has been designed primarily for two types of students. One is the student who has had no previous experience in selling but is desirous of entering that field. Since the program begins immediately with techniques of selling and psychology, it thus supplements any job experience in selling that the student may acquire. The other type of student is one who has had experience in selling or is employed in that field. The program will train him for positions of greater responsibility and offers adequate preparation for positions at the junior executive level.

The student with sales experience, not desirous of taking the full program for the degree of Associate in Science, may take individual courses at any level for which he can qualify either through previous formal education or by commensurate practical experience.

The provision for electives in the senior year offers a wide range of course selection. This may be either in a specialized field or a broad field, depending on the student's interest.

YEAR	SEMESTER	FOUR YEAR PROGRAM
1	Fall and Spring	English (E 13-14) Psychology (P 23-24) Principles of Selling (SM 11-12)
	Summer	
2	Fall and Spring	Marketing and Market Analysis (SM 23-24) Introductory Accounting (A 11-12) Economics (Ec 33-34)
	Summer	
3	Fall and Spring	Advertising and Sales Promotion (SM 33-34) Law of Contracts and Business Associations (L 11-12) Public Relations (BA 31-32)
	Summer	
4	Fall and Spring	Sales Administration and Management (SM 43-44) Elective Elective

Office Supervision and Management

Division Chairman—M. K. Peterson Program Chairman—C. R. Baumes

The program in Office Supervision and Management is mainly designed for those students employed in office positions who wish to prepare themselves for supervisory positions within the office organization. The program has as a further objective preparation for the position of office manager.

As in other programs in the Division of Business, students not desiring to take the complete program leading to the Associate in Science degree may study only those courses for which they have a desire and interest and for which they have the prerequisites either by virtue of previous educational training or commensurate practical experience.

Provision for elective courses permits specialization within a given field, such as accounting or sales, or it permits the study of more general courses. Those students in the Seminar who wish to do research in personnel problems are advised to take one semester of Seminar followed by Conference Leadership (PS 42). Students electing this procedure must indicate this choice to the Program Chairman prior to registering for the Seminar.

YEAR	SEMESTER	FOUR YEAR PROGRAM
1	Fall and Spring	Psychology (P 23-24) English (E 13-14) Office Organization and Management (OM 11-12)
	Summer	
2	Fall and Spring	Introductory Accounting (A 11-12) Personnel Administration (PS 23-24) Modern Civilization (Soc 13-14)
	Summer	
3	Fall and Spring	[1]Management-Labor Relations (PS 41) * [2]Fundamentals of Supervision (PS 22) Economics (Ec 33-34) Elective
	Summer	
4	Fall and Spring	Seminar (OM 41-42) or [1]Seminar (OM 41) and [2]Conference Leadership (PS 42) Public Relations (BA 31-32) Elective

[1]Fall only. [2]Spring only.

* Offered in alternate years. See course description.

Division of Engineering

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The Division of Engineering offers programs of study in General, Electrical, Materials, and Mechanical Engineering.

The individual programs are specialized and concentrated endeavors to present to the student the fundamental background in engineering information, thinking, and analysis in order that he may learn how to approach and solve the general types of engineering problems in his field. The programs are developed on the basis of standard four-year programs, streamlined and concentrated to the essential courses required for the educational objectives above and consistent with the shorter time available. Only by taking full advantage of work-study coordination can these objectives be fully realized.

Students enrolling in the Engineering Division are fortunate in having for their use the laboratory facilities of Yale University. Classes are held in Dunham Laboratory of Electrical Engineering, Sloane Physics Laboratory, Hammond Metallurgical Laboratory and Sheffield Laboratory of Engineering Mechanics. These facilities make it possible to offer advanced students in this division courses that are generally given in the junior and senior years of a four-year engineering program.

Organization — The courses in the Division of Engineering are on three levels: Pre-Engineering, Basic and Specialized or General. A student is placed initially at the level on which his abilities and knowledge indicate he will profit most, and he is then expected to show satisfactory performance in order to progress to the next level.

Description of Levels — PRE-ENGINEERING is designed for students who are interested in studying Engineering, but whose background or knowledge is not yet sufficient for Basic Engineering. Students at this level study first "Fundamental Mathematics", Mathematics A-B and C-D.

BASIC ENGINEERING is the general training which is common to, and essential for, all the later specialized branches of Engineering. It consists of courses in Mathematics (13-14) and Physics (11-12).

GENERAL ENGINEERING gives the student considerable freedom in the choice of subjects after completing the basic engineering preparation of the first two years, the choice being subject to the approval of his staff counselor. Such a program is applicable to those students who wish to pursue a combination of engineering and management in order to fit themselves for technical supervisory work, or to people who desire engineering plus considerable breadth of general education in preparation for transferring to senior college or university. It will also be an aid to students employed in companies whose work carries requirements different from the more usual industrial jobs. Such a program would provide the necessary flexibility for the student to select subjects in accordance with his needs, yet still maintain the basic fundamental group of engineering subjects. The Associate in Science degree is awarded upon the successful completion of work at this level.

SPECIALIZED ENGINEERING is the level of studies in the Engineering Division in which the student elects to study one of the specialized curricula in Electrical Power, Electrical Communications, Industrial Electronics, Mechanical Design, Tool Design, and Metallic Materials. The Associate in Science degree is awarded upon the successful completion of work at this level.

Admission to Levels — The level placement of each student is made on the basis of his particular background, knowledge, aptitude, and any other evidence that is available. Because there are these various factors involved, *no absolute requirements* can be given. The following guides may be helpful, however, in approximating the level where he may be placed.

PRE-ENGINEERING is open to any student who is seriously interested in studying Engineering and who is capable of doing college work. *The work of the Pre-Engineering level is of an intensive nature,* however, and experience has shown that *only students with real aptitude for engineering are apt to succeed.*

BASIC ENGINEERING — Study at this level may be undertaken by direct admission or by promotion from Pre-Engineering mathematics.

Direct Admission is determined by a combination of factors, of which the following are most important:

a. Actual working *knowledge* of the fundamentals of arithmetic, algebra and geometry—as demonstrated by performance on the Mathematics Placement Test. Having once studied the above subjects in high school does not assure that one currently possesses the necessary knowledge. On the other hand, such knowledge can be gained on one's own by self-study, through learning on the job, training while in service, etc. Hence, the Placement Test is administered to determine present knowledge, however gained.

b. *Aptitude* for engineering—especially the ability to think quantitatively, manipulate symbols, analyze, and draw deductions. Such traits are considered in the Psychological Test for admission, and a better than average performance is expected for Basic Engineering.

c. High school *preparation* in mathematics. This should include college-preparatory courses in algebra, plane geometry, intermediate algebra, and trigonometry, in preference to shop mathematics, practical mathematics, applied mathematics, etc. The grades should have at least averaged "C" or better. A student having less than three years of college-preparatory mathematics or very poor marks will probably be placed in Pre-Engineering.

Admission from Pre-Engineering is not automatic but is determined by a combination of

a. *Knowledge* of fundamentals, as demonstrated by an examination comparable to (a) above.

b. *Aptitude* for Engineering, similar to (b) above.

c. *Satisfactory grades* in Pre-Engineering courses, ordinarily "C" or better. Most students who are eventually admitted in Basic Engineering received "A" or "B" in Mathematics A-B, and "C" or better in Mathematics C-D.

GENERAL or SPECIALIZED ENGINEERING is ordinarily open only to those who have satisfactorily completed the courses in Basic Engineering. Although not absolutely required, it is expected that those entering either General or Specialized Engineering will have acquired grades of "C" or better in their previous engineering courses. Those who have not are advised to consider a change in their educational objective.

General Engineering

Division and Program Chairman—W. R. Hibbard, Jr.

As a result of a survey of community engineering needs, it was determined that many of the small manufacturing companies in this area are unable to employ a specialist in each of the fields of engineering involved in their manufacturing processes. Instead, it appears that the engineer they employ must have a working knowledge of these various fields as they are applied to the particular product. In addition he may need to know something of the aspects of management, such as methods, costs, personnel administration, et cetera.

The general engineering program was developed to meet this need. In this program, after spending the first two years learning basic engineering, the student may tailor his program to the needs of his job or to the position for which he is striving. Twenty semester hours of credit or one third of the total required credits are left to his choice, subject to the counseling of his staff advisor. Combined with certain courses of the Management Division this program would develop a pattern of courses commonly called Industrial Engineering and would provide a background for process engineering and a basis for further study in industrial administration which is particularly suited to those students who are interested in administrative positions requiring an engineering foundation.

In addition, it is possible for the student to study integrated units of one, two, three, or four years duration depending on the degree of theoretical and technical training required by the student's present or intended position. This simply means that he would have acquired an employable technical skill at the end of each one of these four years.

YEAR	SEMESTER	FOUR YEAR PROGRAM
1	Fall and Spring	Mathematics (M 13-14) Engineering Drawing (D 11-12) Engineering Physics (Ph 11-12)
	Summer	
2	Fall and Spring	Mathematics (M 21-22) [1]Mechanics (EM 27) [2]Strength of Materials (EM 28) Electric and Magnetic Circuits (EE 23-24)
	Summer	
3	Fall and Spring	English (E 13-14) [1]Introduction to Design (D 21) [2]Electrical Metering (EE 26) or Electrical Survey for Engineers (EE 22) † Elective
	Summer	
4	Fall and Spring	† Elective † Elective † Elective

[1] Fall only. [2] Spring only.

† Of the twenty possible hours of electives: (1) five must be selected from the field of engineering; (2) all course prerequisites must be satisfied; (3) all must meet the approval of a staff counselor.

Electrical Communications Engineering

Division Chairman—W. R. Hibbard, Jr. Program Chairman—C. F. Spitzer

The objective of this program is to give a thorough grounding in the principles underlying the general field of electrical communication.

The course in Electric and Magnetic Circuits is designed to give a thorough background in basic concepts, as well as a brief survey over the field of Electrical Engineering in general. A course on Electrical Metering, conducted concurrently, should prove immediately advantageous to those employed in the electrical industry. The course in A-C Circuits in the junior year will lay the foundation for more advanced work in the circuits field, such as the Communications Circuits course in the senior year. The Elementary Electronics course will provide a background in the specialized subject of electronics, and will be supplemented by a special Electronics Laboratory course, conducted concurrently. Thus, the Advanced Electronics course is built on a sound foundation and will permit the treatment of more complicated electronic apparatus, operating at higher frequencies.

The addition of the Electronics Laboratory course and of Advanced Electronics to the communications program previously offered is recognition of the growing demand for more advanced and specialized training. This program is designed for students engaged in technical work in the telephone, telegraph, radio or electronics industries.

General theory and technical application are spread throughout the entire program in a sequence which will permit a student to pursue his engineering education for one, two, three, or four years depending on the requirements of his present and expected future position.

YEAR	SEMESTER	FOUR YEAR PROGRAM
1	Fall and Spring	Mathematics (M 13-14) ✓ English (E 13-14) Engineering Physics (Ph 11-12)
	Summer	
2	Fall and Spring	Electric and Magnetic Circuits (EE 23-24) Mathematics (21-22) [1]Engineering Drawing (D 11) [2]Electrical Metering (EE 26)
	Summer	
3	Fall and Spring	AC Circuits (EE 31-32) Elementary Electronics (EE 43-44) Electronics Laboratory (EE 43L-44L) *
	Summer	
4	Fall and Spring	Communications Circuits (EE 45-46) Advanced Electronics (EE 47-48) Elective

[1] Fall only. [2] Spring only.

* Offered in alternate years. See course description.

Electrical Power Engineering

Division Chairman—W. R. Hibbard, Jr. Program Chairman—C. F. Spitzer

The foremost objective of the Electrical Power Program is to provide a sound and thorough training in the fundamentals of electrical engineering necessary to a successful mastery of the problems met in the power field. To this end, the early portion of the program is devoted to training in written and oral expression and also to the basic science and mathematics essential to progress in electrical engineering. The latter portion of the program deals with technical courses, such as Electric and Magnetic Circuits, Electrical Metering, D-C Machines, and A-C Circuits. Some of these courses will attempt to survey the field of electrical engineering and to build a foundation for further technical study, while others will provide opportunity for technical study directly.

The courses on DC Machines and Power Transmission permit a full discussion of new developments of d-c machines and an understanding of the problems of transporting electrical energy and of circuit protection. Thus, this program should be particularly appealing to students presently employed in public utilities, electrical manufacture, industries utilizing electrical power equipment and industries producing power equipment.

Theoretical training and technical application are arranged in a sequence which will permit a student to study for one, two, three, or four years depending on the requirements of his present or intended position.

YEAR	SEMESTER	FOUR YEAR PROGRAM
1	Fall and Spring	Mathematics (M 13-14) English (E 13-14) Engineering Physics (Ph 11-12)
	Summer	
2	Fall and Spring	Electric and Magnetic Circuits (EE 23-24) Mathematics (M 21-22) [1]Engineering Drawing (D 11) [2]Electrical Metering (EE 26)
	Summer	
3	Fall and Spring	AC Circuits (EE 31-32) DC Machines (EE 35-36) Elective Elementary Electronics (EE 43-44) recommended
	Summer	
4	Fall and Spring	Electric Power Transmission (EE 37-38) AC Machines (EE 41-42) Thermodynamics and Heat Power (Ph 31-32) *

[1]Fall only. [2]Spring only.

* Offered in alternate years. See course description.

Industrial Electronics

Division Chairman—W. R. Hibbard, Jr. Program Chairman—C. F. Spitzer

In addition to the study of preparatory engineering subjects such as physics and mathematics, the program in Industrial Electronics includes the study of electrical machinery as well as courses in electronics. The inclusion of AC and DC machines as well as elementary electronics with laboratory meets the basic needs of such a program. Further training in the electronics field is offered if the advanced electronics course is taken as the elective.

As in other electrical engineering programs sequence has been arranged so that it is possible to study for one, two, three, or four years, depending on the needs of the individual student.

YEAR	SEMESTER	FOUR YEAR PROGRAM
1	Fall and Spring	Mathematics (M 13-14) English (E 13-14) Engineering Physics (Ph 11-12)
	Summer	
2	Fall and Spring	Electric and Magnetic Circuits (EE 23-24) Mathematics (M 21-22) [1]Engineering Drawing (D 11) [2]Electrical Metering (EE 26)
	Summer	
3	Fall and Spring	AC Circuits (EE 31-32) Elementary Electronics (EE 43-44) Electronics Laboratory (EE 43L-44L) *
	Summer	
4	Fall and Spring	AC Machines (EE 41-42) DC Machines (EE 35-36) Elective (Advanced Electronics recommended)

[1] Fall only. [2] Spring only.

* Offered in alternate years. See course description.

Mechanical Design Engineering

Division and Program Chairman—W. R. Hibbard, Jr.

To serve the needs of the numerous manufacturing industries in southern Connecticut, the design option of the Mechanical Engineering Program provides training in the fundamental phases of the design and analysis of mechanical machinery and equipment and related subjects, such as manufacturing processes and engineering materials. It is intended for students who wish to learn the "why" and "how" of the various operations that are performed on the drawing board or in the shop. By this means a fundamental basis is provided for developing machine or equipment operators or clerical assistants into a design draftsman, a technical or production assistant, or a sales or service engineer.

The mechanical design option, like most engineering programs, is planned so as to give the student in his first year the knowledge of fundamentals in mathematics, science, and English needed for success in this profession. As the course progresses efforts are more and more directed at specific technological courses until in the final semesters the work is entirely technical in nature. Laboratory and demonstration work are introduced as found appropriate in connection with the subject matter being covered in the various courses.

The complete program is arranged in such a manner as to permit the studying of integrated units of one, two, three, or four years duration depending on the theoretical and technical needs of the student in relation to his present and future job requirements.

YEAR	SEMESTER	FOUR YEAR PROGRAM
1	Fall and Spring	Mathematics (M 13-14) Engineering Drawing (D 11-12) Engineering Physics (Ph 11-12)
	Summer	
2	Fall and Spring	Mathematics (M 21-22) [1]Mechanics (EM 27) [2]Strength of Materials (EM 28) [1]Introduction to Design (D 21) [2]Electrical Survey for Engineers (EE 22)
	Summer	
3	Fall and Spring	[1]Mechanisms (EM 33) [2]Dynamics of Machinery (EM 34) [1]Mechanical Processes (EM 23) [2]Engineering Materials (EM 26) English (E 13-14)
	Summer	
4	Fall and Spring	[1]Elementary Machine Design (D 33-34) [2]Advanced Machine Design (D 41-42) Elective

[1]Fall only. [2]Spring only.

Tool Design Engineering

Division and Program Chairman—W. R. Hibbard, Jr.

The tool design option of the Mechanical Engineering Program was developed on the basis of the observations of technical educators and practicing mechanical engineers that a substantial portion of the mechanical engineering in manufacturing industries is concerned with "tooling up" for production. It is intended to provide the student with the fundamental basis for the design, selection and heat treatment of tools for a specific purpose and the analysis and planning of the use of tools in manufacturing processes. Here, a student employee, such as the tool room helper, may obtain the background for developing into a tool draftsman, a tool production engineer, an efficiency man for tooling methods, or a sales or service engineer for tool manufacturing concerns.

It is possible for a student to study integrated units of one, two, three, or four years in length depending on the degree of theoretical and technical training required by the student's present or intended position.

YEAR	SEMESTER	FOUR YEAR PROGRAM
1	Fall and Spring	Mathematics (M 13-14) Engineering Drawing (D 11-12) Engineering Physics (Ph 11-12)
	Summer	
2	Fall and Spring	Mathematics (M 21-22) [1]Mechanics (EM 27) [2]Strength of Materials (EM 28) [1]Introduction to Design (D 21) [2]Electrical Survey for Engineers (EE 22)
	Summer	
3	Fall and Spring	English (E 13-14) Steels and Heat Treatment (Mt. 41-42) * Methods Engineering (IA 41-42)
	Summer	
4	Fall and Spring	[1]Elementary Tool Design (D 35-36) [2]Advanced Tool Design (D 45-46) Elective

[1]Fall only. [2]Spring only.

* Offered in alternate years. See course description.

Metallic Materials Engineering

Division and Program Chairman—W. R. Hibbard, Jr.

The metallic materials engineering course was developed to assist the manifold industries utilizing metals in this area in training men or obtaining men trained in the fundamentals of the processing, properties and uses of metals, and the application of these fundamentals to typical problems in industry. Related engineering subjects, such as mechanics and strength of materials, which are essential in modern metallurgical operations, are also included. Graduates in this option should be equipped with the fundamental technical basis for starting in trouble shooting and technical control and development in the metal producing or fabricating industries.

This curriculum has been planned so as to give the student the fundamentals in those branches of engineering related to his major field. The courses in metallurgy are not taken until the fundamentals of engineering have been studied. This schedule is followed in order to make certain that students have the basic technical knowledge and the background of experience desired by the metallurgical industry. In view of the industrial opportunities offered to the metallurgical engineer in southern New England, students are advised to evaluate this program in terms of their own capabilities and capacity.

The sequence of courses are arranged in integrated units of one, two, three or four years in length. The student may study for whatever length of time he desires in order to meet the theoretical and technical requirements of his present or expected future position.

YEAR	SEMESTER	FOUR YEAR PROGRAM
1	Fall and Spring	Mathematics (M 13-14) English (E 13-14) Engineering Physics (Ph 11-12)
	Summer	
2	Fall and Spring	Inorganic Chemistry (Ch 21-22) * Mathematics (M 21-22) [1]Mechanical Processes (EM 23) [2]Engineering Materials (EM 26)
	Summer	
3	Fall and Spring	[1]Mechanics (EM 27) [2]Strength of Materials (EM 28) Engineering Drawing (D 11-12) Non-ferrous Metallurgy (Mt 31-32) *
	Summer	
4	Fall and Spring	Steels and Heat Treatment (Mt 41-42) * [1]Introduction to Design (D 21) [2]Electrical Survey for Engineers (EE 22) Elective

[1]Fall only. [2]Spring only.

* Offered in alternate years. See course description.

Division of Management

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During the last several years, there has been an increasing demand for courses in Supervision, Production, Methods, Motion and Time Study, Safety, Personnel and Labor Relations. Three major curricula leading to the Associate in Science degree have been developed within the Division of Management. The program in Industrial Administration is designed primarily for persons whose major administrative responsibility might be in a staff department dealing with materials, methods, or other non-personnel phases of the business. The Personnel Supervision Program is designed for those who are concerned primarily with the managing of personnel. An Industrial Safety option is available for students approaching the subject either from a personnel or non-personnel position.

While these programs are organized primarily for degree students, special students who are qualified by experience or previous study may be admitted to any course. Instruction, where practicable, is given by men who are in immediate contact with current industrial problems in the field. Visiting specialists in certain areas conduct classes in their specialties.

Students electing a program in the Division of Management are subject to an entrance requirement in mathematics (See page 33). Non-degree students may be admitted to special advanced courses without meeting this requirement, but they are referred to the regulations concerning non-degree students as set forth on page 30.

All programs of the Management Division (Industrial Administration, Personnel Supervision, and Industrial Safety) are arranged in a sequence of constantly increasing levels of technical and theoretical training to make it possible for a student to study integrated units of one, two, three, or four years duration, depending on the degree of training he desires. This plan of arrangement also makes it possible for students to accept beginning jobs in business and industry in these fields during the latter part of their first year of study, rather than to wait until their program is completed.

Personnel Supervision

Division and Program Chairman—Lawrence L. Bethel

Five types of students find study in personnel supervision profitable: (1) those who wish to prepare for the line supervisory positions in business and industry; (2) those who wish to secure a background for a staff position in personnel relations; (3) present foremen and members of "middle management" who desire to broaden the base of their technical training; (4) engineers, accountants and others in staff positions who desire to prepare for supervisory responsibilities in their fields; (5) union stewards and officers.

These students find about one half of their program devoted to fundamentals of human relations and the other half to the technical aspects of the job, but even in the technical aspects it is not forgotten that a supervisor of personnel functions through employees as groups and as individuals. Psychology, Fundamentals of Supervision, Personnel Administration, Management-Labor Relations, and Personnel Seminar are courses stressing the principles of scientific management as related to personnel work. An overall view of industry is emphasized in industrial organization and management, while specific aspects of the industrial process are examined in Methods and Costs and Production Control. The required English program is to give competence in writing and speaking; and courses in sociology, economics, and science help the student to realize the impact of these forces on man's daily life and work.

YEAR	SEMESTER	FOUR YEAR PROGRAM
1	Fall and Spring	English (E 13-14) Psychology (P 23-24) Industrial Organization & Management (IA 11-12)
	Summer	
2	Fall and Spring	[1]Methods and Costs (PS 21) [2]Fundamentals of Supervision (PS 22) Personnel Administration (PS 23-24) Modern Civilization (Soc 13-14)
	Summer	
3	Fall and Spring	Economics (Ec 33-34) Elective [1]Management Statistics (IA 35) [2]Production Control (IA 32) or Public Relations (BA 31-32)
	Summer	
4	Fall and Spring	[1]Management-Labor Relations (PS 41) * [2]Conference Leadership (PS 42)* Modern Science (Sc 11-12) Elective

[1]Fall only. [2]Spring only.

* Offered in alternate years. See course description.

Industrial Administration

Division and Program Chairman—Lawrence L. Bethel

The basic program in Industrial Administration provides a background for those whose administrative responsibilities lie within the area of such a staff function as purchasing, inspection, production control, time study or methods. To meet the need for a modern industrial administrator with an understanding of the impact of the non-industrial world upon the problem of industrial administration, students in this program study the scientific method, psychology, sociology and economics. Writing and speaking are tool subjects.

Students working in the field of time and motion study should take as electives elementary accounting and personnel administration. Time study is a cost control tool and is thus related to the accounting function. Time study is the basis of incentive standards and is thus related to wage administration which is a personnel function.

Students desiring to enter administrative positions which require more engineering background than is provided in this program are referred to the description of the General Engineering Program. The course of study should be worked out with the chairman of engineering or management as advisor.

YEAR	SEMESTER	FOUR YEAR PROGRAM
1	Fall and Spring	English (E 13-14) Psychology (P 23-24) Industrial Organization & Management (IA 11-12)
	Summer	
2	Fall and Spring	Modern Civilization (Soc 13-14) [1]Methods and Costs (PS 21) [2]Production Control (IA 32) Elective
	Summer	
3	Fall and Spring	Economics (Ec 33-34) [1]Management Statistics (IA 35) [2]Quality Control (IA 36) Modern Science (S 11-12)
	Summer	
4	Fall and Spring	Engineering Drawing (D 11-12) Methods Engineering (IA 41-42) Elective

[1]Fall only. [2]Spring only.

Industrial Safety

Division Chairman—Lawrence L. Bethel Program Chairman—E. W. Martin

Majors in the Division of Management may elect the Industrial Safety option. This option is designed primarily for safety engineers and safety supervisors or those preparing for such positions. In this option the student may secure an understanding and appreciation of the fundamentals of safety, the scientific analysis of safety problems, a study of methods improvement to eliminate hazards, and some research and creative work in accident prevention.

Students whose responsibilities chiefly involve materials, methods, or the non-personnel aspects of safety must elect two of their three electives from the following subjects: Engineering Drawing, Production Control, Management Statistics, Mechanical Processes, Engineering Materials, Quality Control.

Those whose responsibilities are primarily related to personnel supervision must elect two of the following subjects: Personnel Administration, Public Relations, Fundamentals of Supervision, Management-Labor Relations.

To be certain of fulfilling degree requirements, any student in the Industrial Safety option taking an elective should submit his tentative schedule to the program chairman for approval.

YEAR	SEMESTER	FOUR YEAR PROGRAM
1	Fall and Spring	English (E 13-14) Psychology (P 23-24) Industrial Organization & Management (IA 11-12)
	Summer	
2	Fall and Spring	Modern Civilization (Soc 13-14) [1]Methods and Costs (PS 21) Elective (2½ Semester Hours) Elective (5 Semester Hours)
	Summer	
3	Fall and Spring	Industrial Safety (S 11-12) * Elective Economics (Ec 33-34)
	Summer	
4	Fall and Spring	Methods Engineering (IA 41-42) Adv. Industrial Safety (S 21-22)* Modern Science (Sc 11-12)

[1] Fall only.

* Offered in alternate years. See course description.

SUMMER SESSION

Section 5

The Summer Session

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The College offers a summer session with these primary functions:

1. To offer opportunity for summer study to those residents of the New Haven area who attend other schools during the regular school year. For financial reasons, most of these students find it desirable to live at home and work during the summer. The summer program of the College is confined to evening classes; therefore, it is possible to work during the day and attend classes in the evening. Reasons for summer study vary, but are generally confined to the following:
   a. To make up deficiencies.
   b. To satisfy prerequisites for courses in the parent institution.
   c. To acquire advanced standing in the parent school.

   Experience has shown that the credits earned at the College are acceptable to parent institutions. The College is a member of the New England Association of Colleges and Secondary Schools. For additional assurance of the acceptance of credit by the parent school, prior approval by that school is advisable.
2. To provide opportunity for summer study to the students of the College. Reasons for summer study for this group of students may be described as follows:
   a. To lighten the study load during the regular school year, but still meet the yearly requirements of the four year program.
   b. To shorten the normal time required for a degree.
   c. To take preparatory work.
   d. To make up deficiencies caused by failure in certain courses.
   e. To take additional work beyond the degree requirements and yet complete a program within the normal time of four years.

NOTE: The accomplishment of any one of the five objectives listed above will depend on the specific subjects offered during any summer session.

Registration — For all new students a personal interview with a staff member of the College is necessary. Registration procedures will be explained at this time. For those new students who desire work for credit in other institutions, prior approval should be obtained from those institutions (see 1 above). This procedure should be followed each semester regardless of previous attendance.

For those students who are new and who plan to attend the College as permanent students, a personal interview with a staff member is necessary prior to registration.

For those students who are already enrolled, the registration procedure is the same as for any semester. However, these students are advised to consult with their department chairman in order to assure the proper selection of courses for the accomplishment of their specific objectives.

Admission Requirements

For those already enrolled in the College—none.

For those enrolled in other institutions—formal evidence of successful completion of at least one year's study in an accredited college or entrance by examination.

For students other than the above—high school graduation or equivalent and suitable level of achievement on entrance examinations.

Fees

	For courses meeting each school session	*For courses meeting on alternate sessions*
Registration (payable on initial registration only and not thereafter)	$ 3.00	$ 3.00
Student Activity Fee	1.00	1.00
Tuition	62.50	31.25
Total	$66.50	$35.25
Additional charge if tuition is paid on deferred plan	$ 1.00	$ 1.00

Calendar

Study begins no earlier than the last week in June and ends no later than the second week in September. Classes meet on Monday, Wednesday, and Friday evenings with the holidays of July Fourth and Labor Day observed. Certain classes require attendance every school night, others on alternate school nights. "School nights" are Monday, Wednesday, and Friday.

Credit

Courses at college level meeting three evenings per week offer five semester hours of credit; those meeting on three evenings every two weeks offer two and one-half hours of credit. Certain courses are of pre-college level and meet in the same manner as credit courses, but no college credit is offered.

List of Courses

Courses offered during the summer session are, for the most part, beginning courses in the various fields of technical education offered during the regular school year and courses of a general nature. Courses usually offered in the Summer Session are:

- Economics
- Engineering Drawing
- Grammar (Preparatory)
- Law
- Mathematics (Preparatory
- Mathematics
- Physics
- Psychology
- Reading (Preparatory)
- Sociology
- Speech
- Writing

It should be noted that when there is evidence of sufficient enrollment, the College is in a position to offer other subjects. Students desiring other subjects should secure an application blank to indicate the courses desired. This should be done sufficiently in advance of the opening of the summer session to permit adequate preparation for instruction, facilities, and scheduling by the College.

Type and Facilities of Instruction — Members of the faculty of Yale University as well as recognized instructors from business and industry are available for summer intruction. Buildings and facilities of the Sheffield Scientific School of Yale University are used.

SPECIAL COURSES

Because of its close connection with New Haven business and industry and with Yale University, the College is in a position to offer special courses to interest groups desiring instruction and guidance to meet their specific needs. The breadth of the facilities available, especially in the form of competent instruction, makes possible an almost limitless ability to meet the conceivable needs of individuals and groups in any area of study.

Several examples will better explain the significance of "special courses for interest groups". A local Parent-Teacher-Association group may wish to study new ideas and principles relative to adolescent psychology. There may be a number of individuals from various fields of endeavor who desire guidance in creative writing. A group of businessmen might want to receive instruction in group or public speaking. These special courses may be of a technical or avocational nature, in liberal arts or in the humanities. They may be for credit or non-credit. There is no particular pattern or form. Such courses are designed to meet the needs of each group; these needs are the only criteria.

Persons who are interested in such courses should first check the "Description of Courses" section of the catalog, beginning on page 81, to determine whether the course they desire is one of the College's regular offerings. If not, inquiry should be made to any officer of the College.

Section 6

DESCRIPTION OF COURSES

Section 7

Description of Courses

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Accounting

Introductory Accounting (A 11-12). Credit, 5 semester hours.

This course, which is prerequisite to all other courses in accounting, familiarizes the student with fundamental principles of accounting. This work is supplemented by progress tests, problems, and systematic practice work. The fields of study covered include: interpretation of assets, liabilities, and net worth; preparation of statements; books of original entry; ledgers; and work at the end of a fiscal period.

Intermediate Accounting (A 21-22). Credit, 5 semester hours.

This course is a continuation at a more advanced level of the principles studied in Introductory Accounting. It is intensive and adapted to present day changes in the accounting profession. The subject matter includes: the corporation, asset valuations, liabilities, installment sales and consignments, analysis and interpretation of financial statements, sources and application of funds, depreciation methods, inventory evaluation, reserves, and surplus analysis. There is considerable practice in the form of problem solutions. Reference is made to the publications of the professional accounting societies.

Prerequisite: A 11-12.

Cost Accounting (A 23-24). Credit, 5 semester hours.

This course embraces the study of departmental and process cost accounting, specific order cost accounting, and standard costs. Thorough consideration is given to cost elements of material, labor, and manufacturing expense. Also included is the study of cost estimating, budgets in cost control, cost relationships, and cost reports for use of management. Forms and methods used in standard costs and analyses of variances for operational use are considered. Practical application of the principles studied is given through the working of practice sets and problems.

Prerequisite: A 11-12. Not offered 1952-53 and alternate years thereafter.

Advanced Accounting (A 31-32). Credit, 5 semester hours.

This is the final general accounting course covering all other phases of accounting not previously covered and not considered of a specialized nature. Upon completion of this course, the student is prepared for advanced study in specialized accounting and C.P.A. problems. Problems are solved under conditions similar to those required by the American Institute of Accountants. Emphasis is placed upon accounting for consolidations, but the following phases are also covered: partnerships; enterprises in receivership, liquidating partnerships in installments, estates and trusts; ventures, domestic, home office and branch accounting.

Prerequisite: A 21-22.

Auditing (A 33-34). Credit, 5 semester hours.

This course includes examination of the financial condition, review of operations, preparation of audit program, audit working papers, and report upon examination of the client's business. The accountant's relationship with the client and the ethics of the profession are thoroughly discussed. A complete laboratory test is worked out to supplement the text study. Recent developments in audit procedure are included, systems in internal check analyzed, comparisons of balance sheets and detailed audits made. A background is developed in the theory of auditing in preparation for the C.P.A. examination.

Prerequisite: A 21-22. Not offered in 1953-54 and alternate years thereafter.

Income Tax Procedure (A 41-42). Credit, 5 semester hours.

This course embraces a practical application of the principles of Federal Income Tax Law to concrete situations. The problems include the preparation of corporation, fiduciary, partnership, and individual tax returns; claims for refunds, credit, and abatement; records, reports, and requirements of Social Security and state and federal unemployment taxes; and the proper accounting procedure for tax records.

Prerequisite: A 21-22.

C.P.A. Problems (A 43-44). Credit, 5 semester hours.

This course is an analysis and study of C.P.A. problems from examinations of state boards of accountancy and the American Institute of Accountants. There is included a study of the principles of municipal accounting with particular reference to the requirements of Connecticut laws and regulations, and C.P.A. problems in the subject; institutional accounting with reference to methods peculiar to such institutions as colleges, hospitals, etc. A wide variety of problems is included, some of which are worked out under state examination conditions.

Prerequisites: A 23-24, A 31-32, A 33-34, L 21-22. A 33-34 may be taken concurrently.

Business Administration

Business Finance (BA 21-22). Credit, 5 semester hours.

After a brief study of the various forms of business organization, the corporate form of organization is studied in greater detail. Classes of stocks and bonds and the rights of the holder are considered. Management and distribution of income are examined in detail with regard to surplus and dividend policies, reserves, depreciation, and financing of expansion. There is continuous stress on the internal control of finances through budgets and organization as well as financing through banks and investment houses.

Public Relations (BA 31-32). Credit, 5 semester hours.

This course deals with the principles and methods of public relations practice as they have been developed by the pioneers and leaders in this comparatively new field. It shows how these methods are used by individuals, groups, companies, organizations, to sell goods, services and ideas and improve their relations with all in a position to affect their welfare. One of the semester projects is the development of a practical public relations program for a local activity.

The course serves as an introduction to public relations and aims to develop an understanding of the subject which can be helpful to anyone in any field of business or professional or community life.

Business Seminar (BA 41-42). Credit, 5 semester hours.

This course is offered to give degree students in Business Administration an opportunity to examine a problem of their own particular interest and choice. The solution of this problem and the conclusions reached by the student will be presented in the form of a written report. In addition to group discussion and criticism, work will consist of independent reading and research. The first semester will be devoted mainly to group discussions. The student will be called upon to analyze actual business situations and to make recommendations in the form of short written reports.

The completion of two consecutive semesters of work in this course is required before credit is granted.

Prerequisites: 40 hours of college credit of which at least 20 hours must be selected from: Economics, Modern Civilization, Introductory Accounting, Business Finance, Psychology, Public Relations, and Law.

Survey of Business and Industry—Cooperative Program (IA 13C-14C). Credit, 5 semester hours.

See page 89 for course description.

Business Law

Law of Contracts and Business Associations (L 11-12). Credit, 5 semester hours.

This course involves a study of basic principles of the law of contracts, agency, partnerships, limited partnerships, and corporations.

Contracts will involve a study of the formation of contracts, capacity of parties, offer and acceptance, performance, and discharge. Agency will deal with the appointment of agents, the relationship of principal and agent, power of the agent to bind his principal, duties of agent and principal to one another and to third parties.

Business associations will involve a study of the law relating to the formation and operation of the usual types of business organization. Also considered is the legal relationship among the individuals within the business organization as well as their relationship with third parties.

Law of Sales (L 21). Credit, 2½ semester hours.

This course is an advanced study of Business Law comprising: bailments; duties and liabilities of bailees, common carriers, and warehousemen; the laws governing the rights of parties engaged in the transfer of personal property. Questions of title, risks assumed, rights of creditors, express and implied waranties, buyers' and sellers' remedies, together with the business background out of which such relations arise are also considered.

Prerequisite: L 11-12. —Fall only.

Not offered in 1952-53 and alternate years thereafter.

Law of Commercial Paper and Bankruptcy (L 22). Credit, 2½ semester hours.

This course is a study of the Negotiable Instruments Law, dealing with negotiable promissory notes, bills of exchange and bank checks with an analysis of their form and function in commercial transactions. A brief survey of bankruptcy procedure under the federal bankruptcy laws is considered.

Prerequisite: L 11-12. —Spring only.

Not offered in 1952-53 and alternate years thereafter.

Chemistry

Inorganic Chemistry (Ch 21-22). Credit, 5 semester hours.

The objective of this course is to place emphasis on fundamental facts and principles of modern chemistry, particularly as applied in the field of engineering materials, and to afford practice in the accurate statement of scientific ideas and logical deduction from experimental observation. *It does not presuppose any knowledge of chemistry.*

Prerequisite: M A-B, or equivalent. Omitted 1951-1952 and alternate years thereafter.

Drawing and Design

Engineering Drawing (D 11-12). Credit, 5 semester hours.

This is an elementary course in engineering drawing designed to teach the use of instruments, the fundamental principles of projection, drafting room standards and conventions, lettering, selection and use of scales, orthographic projections, revolutions, developed surfaces, intersections and auxiliary views, and the making and dimensioning of complete working drawings of simple machine parts.

Introduction to Design (D 21). Credit, 2½ semester hours.

This course is intended to introduce some elementary concepts of design in the engineering programs in order to:

a. Develop an appreciation of design practice.
b. To serve as a primer for advanced courses.

It will cover elements of theoretical design and conventional design practice and fastenings such as threadings, riveting, et cetera. Drawing board practice in detailing is included.

Prerequisites: D 11-12, Ph 11. —Fall only.

Elementary Machine Design (D 33-34). Credit, 5 semester hours.

The analysis and design of such elements as fastenings, bearings, gears, shafts, clutches, pulleys, and cams are discussed. Some machine parts are studied from the standpoint of kinematics, and their motions are analyzed.

Prerequisites: D 11-12, EM 27-28. —Fall only.

Elementary Tool Design (D 35-36). Credit, 5 semester hours.

This course concerns analysis and design of tool elements and related machinery as an introduction to the general field of tool designing. It is intended to include such things as tool costs, job estimating analysis, automatic screw machines, and tool assemblies.

Prerequisites: D 11-12, EM 27-28. —Fall only.

Advanced Machine Design (D 41-42). Credit, 5 semester hours.

The elements of machine design studied in the first year are unified in the complete design, individually selected and developed by the student. Advanced problems, such as balancing and critical speeds, are considered the latter part of the year.

Prerequisite: D 33-34. —Spring only.

Advanced Tool Design (D 45-46). Credit, 5 semester hours.

A lecture, discussion and drafting room course covering production tools, such as punches and dies, gauges, cutting tools, machine tools, jigs and fixtures. Stress is laid on strength, accuracy and costs, utilizing practical examples from industry. A part of the course consists of a thesis project.

Prerequisite: D 35-36 —Spring only.

Economics

Economics (Ec 33-34). Credit, 5 semester hours.

The course aims at an understanding of the principles, institutions, and practices which form the basis of our economic system and activity. Such aspects of our economy as production, price, exchange, and distribution will be considered. The course will examine the basic economic aspects of capitalism and the other "isms". Opportunity will be offered for the student to do independent work in the field of his own specialized interest.

Economics—Cooperative Program (Ec 21C-22C). Credit, 5 semester hours.

Same as Ec 33-34 described above.

Electricity

Electrical Survey for Engineers (EE 22). Credit, 2½ semester hours.

This is a non-mathematical survey of the applications of electrical machinery to mechanical equipment.

Prerequisite: Ph 12. —Spring only.

Electric and Magnetic Circuits (EE 23-24). Credit, 5 semester hours.

Fundamental concepts of electricity. Ohm's law and Kirchoff's laws. Properties of conductors and insulators. Nonlinear resistance circuits. Magnetic circuits and fields. Induced and generated electromotive force. The dielectric circuit. Brief survey over a-c circuits, d-c and a-c machines and electronic tubes and circuits. With laboratory.

Prerequisites: M 13-14, Ph 11-12, M 21-22. (M 21-22 may be taken concurrently).

Electrical Metering (EE 26). Credit, 2½ semester hours.

Discussion of construction and operation of various types of a-c and d-c ammeters, voltmeters and wattmeters; frequency meters; a-c and d-c bridges; flux meters. Demonstration includes laboratory work.

Prerequisites: EE 23-24. (EE 24 may be taken concurrently). —Spring only

Alternating Current Circuits (EE 31-32). Credit, 5 semester hours.

Fundamental theory of single phase and polyphase alternating current circuits, instruments and measurements is considered. Suitable laboratory work is included.

Prerequisites: EE 23-24, M 21-22.

Direct Current Machines (EE 35-36). Credit, 5 semester hours.

This course includes a review of the fundamental laws of direct current circuits and magnetic circuits; mechanical construction of the d-c machine; magnetic circuits of d-c machines, flux leakage; leakage around windings embedded in slots; armature and field windings; electromotive and magnetomotive forces of the armature, armature reaction; commutation; generator and motor characteristics; stability of motors; special machines, such as 3-wire generator, arc-welding generator, diverterpole generator, dynamotor, rototrol generator, Rosenberg generator (amplidyne), multistage rototrol; losses and heating in d-c machines; starting of d-c motors (manual and automatic starters). Laboratory work is also included.

Prerequisite: EE 23-24.

Electric Power Transmission (EE 37-33). Credit, 5 semester hours.

This course considers generating equipment, types and lay-outs of power plants, switch board lay-out, metering, switching and protective devices, types of transformers and transformer connections. Calculation of short circuit currents, transmission line calculations, and mechanical considerations. System protection and distribution systems.

Prerequisites: EE 31-32, EE 41-42. (EE 41-42 may be taken concurrently.)

Alternating Current Machines (EE 41-42). Credit, 5 semester hours.

This course deals with the fundamental principles of transformers, motors, generators, etc., and their practical application. Laboratory work on this equipment supplements the recitations.

Prerequisite: EE 31-32.

Elementary Electronics (EE 43-44). Credit, 5 semester hours.

This course includes a study of the physical concepts of electronics; thermionic emission; various tube types and characteristics; methods of analyzing vacuum tubes and vacuum tube circuits; amplifier definitions, classifications, circuits; analysis and design of amplifiers; modulation and detection; vacuum tube oscillators; glow and arc discharge tubes; light sensitive tubes and cells; rectifiers and filters; electron tube instruments, with stress on industrial applications where possible.

Prerequisites: EE 23-24, EE 31-32. (EE 31-32 may be taken concurrently).

Electronics Laboratory (EE 43L-44L). Credit, 5 semester hours.

Experiments, supplementing EE 43-44, will be preceded by a short review of underlying principles and a report on each experiment to be written as home work. Close correlation with EE 43-44 will be essential. These two courses will lay the foundation on which the concepts of advanced electronics can be based.

Prerequisites: EE 23-24, EE 43-44. (EE 43-44 may be taken concurrently).

Omitted 1952-53 and alternate years thereafter.

Communications Circuits (EE 45-46). Credit, 5 semester hours.

This course includes a study of the filter theory, transmission line theory, coaxial cables and wave guides; antenna design and radiation patterns; advanced concepts of electric and magnetic fields; pulse forming networks; reactance functions and nondissipative networks; network theorems; characteristics of 4-terminal networks; generalization of four terminal networks.

Prerequisite: EE 31-32.

Advanced Electronics (EE 47-48). Credit, 5 semester hours.

This course includes a review of EE 43-44, which is largely concerned with the discussion of basic circuits making up more complex devices. A large part of the course is assigned to the analysis of apparatus used in practice, both in industry and communications. As time permits, high frequency systems and their operation will be considered in the second semester.

Prerequisite: EE 43-44.

Engineering Mechanics

Mechanical Processes (EM 23). Credit, 2½ semester hours.

This course is designed to acquaint the student with the basic processes and equipment of industry. It begins with the processes involved in the production of engineering raw materials and proceeds through the various methods by which these materials are formed and combined into finished products. Foundry, forge, machine-shop, presswork, die-casting, and welding are examples of the methods and equipment discussed.

—Fall only.

Engineering Materials (EM 26). Credit, 2½ semester hours.

A survey of the common metals used as engineering materials. This course is conducted largely by lecture and discussion. Attention is directed to the production of these materials, methods of forming or fabrication, and typical properties of the final product. The bases for the selection of a particular material for a specific use, and the specifications by which they are purchased also are considered. —Spring only.

Mechanics (EM 27). Credit, 2½ semester hours.

In the first part of the semester the theory and application of the principles of static equilibrium, stress in framed structures, friction, rectilinear and curvilinear motions are studied. The second part of the semester includes force, mass, acceleration, center of gravity, moments of inertia, work, power, and energy.

Prerequisites: Ph 11-12, M 13-14. —Fall only.

Strength of Materials (EM 28). Credit, 2½ semester hours.

This course considers the theory of stress and resistance of materials; stress distribution and riveted joints, shafts, beams, and columns; and principal stresses.

Prerequisite: EM 27 and M 21-22 (Math 22 may be taken concurrently).

—Spring only.

Mechanisms (Kinematics) (EM 33). Credit, 2½ semester hours.

Linkages comprising mechanisms. Graphical analysis of displacements, velocities, and acceleration in mechanisms, including use of instantaneous centers. Design of cams. Analysis of belt drives, gear profile action, and gear trains.

Prerequisites: D 11, EM 27. —Fall only.

Dynamics of Machinery (EM 34). Credit, 2½ semester hours.

The application of the principles of dynamics to the analysis of special topics in machines, such as the effect of inertia, flywheel design, balancing, governors, and gyroscopic effects. Introduction to vibration and critical speeds.

Prerequisite: EM 27. —Spring only.

English

Grammar Laboratory (English A). One semester. Non-credit.

This course is intended to bring students to an acceptable level of proficiency in English grammar and usage, whatever their prior preparation in the subject may have been. Special work is prescribed for those whose preparation is inadequate and for those who show need of review. The objectives of the course are: first, to teach the student the fundamental principles upon which good English is based; second, to give him practical experience in the use of themes, recitations, note-books and conferences; and to train in the use of the dictionary.

Reading Laboratory (English B). One semester. Non-credit.

This course aims at helping the student to read faster and to get more from what he reads. The objectives are more effective study habits, increased vocabulary, the enjoyment of reading and the development of independent thinking. The instruction emphasizes training in the skills of concentration, analysis and retention of ideas. The subject matter includes methods and mechanics of reading, use of the dictionary, values in words, patterns of writing, the outline, rationality of argument, propaganda, and literary values. The work of the course includes reading and exercises in the text, vocabulary exercises, supervised reading for speed, training films and discussion.

Writing Laboratory (E 13). Credit, 2½ semester hours.

This laboratory course is designed primarily to help students learn to write by writing—to develop the ability to organize thoughts quickly and effectively, to write with speed and facility, and to use simple written English. The laboratory section provides practice in applying these principles to the writing of letters, memos, reports, job descriptions, and other business papers.

Speaking Laboratory (E 14). Credit, 2½ semester hours.

This course serves as an introduction to the principles of speech. The objectives are: to develop in the student proficiency in the use of vocal and bodily aids in various speaking situations, and to help the student gain confidence and fluency when speaking extemporaneously, as in group discussions, or in everyday conversation. Recordings are used for self-analysis and criticism.

English Speaking and Writing—Cooperative Program (E 13C-14C). Credit, 5 semester hours.

Same as E 13 and E 14 described above.

Seminar in Writing (E 15-16). One or two semesters with 2½ hours credit per semester. (Either semester may be taken independently of the other)

This course is designed to help the student develop an effective style in one or several types of composition, including technical, journalistic and creative writing, through practice projects, individual and group instruction, and class discussion and criticism. The problems common to all writers are considered, and the types of writing chosen by the class are studied for application and comparison.

Prerequisite: E 13 or its equivalent.

Modern Literature (E 18). Credit, 2½ semester hours.

A course in the reading of approximately ten representative works of outstanding contemporary authors, chiefly American and English. The reading and classroom discussions will be supplemented by lectures designed to provide certain theories of criticism and the historical background. The goal is an understanding of the function of literature and of the artist in society. —Spring only.

Journalism (E 21-22). One or two semesters with 2½ hours credit per semester. (Either semester may be taken independently of the other)

Students are given the opportunity to learn all phases of journalism through the actual writing and publication of a monthly newspaper. Class work is informal so that students may develop their own interests in the field.

Creative Writing (E 23-24). Non-credit. (Either Semester may be taken independently of the other)

A seminar for students who are interested in improving their style of writing, whether they are beginners or professionals, by a study of techniques and methods and by self-criticism. Students may submit material in any form—short story, essay, poetry, drama, biography—to be read to the class and criticized by both class and instructor. Special projects in creative writing may also be carried out by individual students with the instructor's approval. The standard aimed at is professional.

Literature—Cooperative Program (E 25C-26C). Credit, 5 semester hours.

A study of the main currents of thought in literature from the beginning of the nineteenth century to the present. The contributions of outstanding writers of biography, poetry, drama, essay, short story, and the novel, will be considered as means of expression and of interpreting universal human themes. The emphasis will be on the permanent values of these writings as expressions of the experiences common to mankind.

Industrial Administration

Industrial Organization and Management (IA 11-12). Credit, 5 semester hours.

This is a fundamental course dealing with the history of American industry; the organization of the industrial enterprise; the making of the product, with its manifold problems of men, materials, and machines; and the distribution of the product to the consumer. Through such a survey, together with specific cases, the intent is to provide a working knowledge of our highly complex industrial organizations, and at the same time, to establish the principles by which competent management is guided.

Survey of Business and Industry—Cooperative Program (IA 13C-14C). Credit, 5 semester hours.

This is a fundamental course dealing with the history of business and industry; an appreciation of the functions and responsibility of business enterprise; some understanding of the variety of activities which go to make up our complete business system; the problems of men, materials and machines that are involved in the making and distribution of the product. Through such a survey the intent is to provide an understanding of our highly complex industrial and business organizations and how they fit into our economic activity.

Coordination—Cooperative Program (IA 15C-16C). Non-credit.

This is intended to assist the Cooperative student in his adjustment to the various situations that he will meet on his job during the work quarter. It discusses the opportunities that exist in the various fields; things to look for while on the job; relations with supervisors and other employees and what the employer expects of the Cooperative student. These topics are covered during the study quarter through group meetings and individual conference with the instructor. However, coordination is continued during the work quarter by periodic conference with the College coordinator while the student is on the job.

Production Control (IA 32). Credit, 2½ semester hours.

The instruction stresses the basic principles that govern production control in an industrial plant. These principles are worked out in the problems of procuring and controlling materials, in routing, scheduling, and dispatching. The intent of the course is to familiarize the student with the use of the most up-to-date methods in this field, including visual control systems.

Prerequisite: IA 11. —Spring only.

Management Statistics (IA 35). Credit, 2½ semester hours.

Selected elements from elementary statistics as they apply to management problems including measures of central tendency, measures of variability and simple correlational techniques. The use of statistics as a management tool will be illustrated in class problems.

Prerequisite: MM A-B or satisfactory performance on the Management Mathematics Test. —Fall only.

Quality Control (IA 36). Credit, 2½ semester hours.

This is not a course covering inspection methods, but a course in statistical quality control. "Quality", as the term is used in this course, is the ability of any product or service to conform to specifications. "Control" is simply the business of assuring conformance. Statistical quality control thus represents by far the most economical way of controlling the quality of a product or process because it does not use 100% inspection to weed out defective items already produced, but samples the process or service to eliminate the defects before they occur.

Prerequisite: IA 35 and IA 11. —Spring only.

Methods-Time-Measurement (IA 37). Non-credit.

The instruction in this course has two objectives: to acquaint the student with the basic principles of this new tool for work measurement and methods analysis, and to promote skill for practical application of these principles. The instruction will be accompanied by application of MTM to actual industrial operations both by class demonstrations and assignment of case problems in the student's own industry.

Admission Requirements—Open to special students whose practical experience will enable them to profit from the course, and to regularly enrolled students who have completed the college's course in Methods Engineering.

Methods Engineering (IA 41-42). Credit, 5 semester hours.

Instruction in methods of analyzing plant equipment, products, and operations is covered in this course. Process charts, flow charts, analysis sheets, preparation of summaries of operations, analyses of tools and requisite equipment, specifications for materials, the handling of materials in process, adapting plants to new products, the correlation of methods to safety and health requirements are some of the items considered. Time and motion study techniques are introduced in connection with many of these problems.

Prerequisite: PS 21.

Industrial Safety

Industrial Safety (S 11-12). Credit, 5 semester hours.

The approach to the subject of industrial safety is from an analytical and scientific viewpoint. It aims to give a foundation to the student upon which he can build a better knowledge of safety and accident prevention. Each student will be required to give at least two talks before the class on a relevant subject and present a written report of not less than one thousand words. Safety talks of this course will be recorded and played back to the class for criticism and suggestion in order to increase the individual's ability in safety presentation.

Omitted 1952-53 and alternate years thereafter.

Advanced Industrial Safety (S 21-22). Credit, 5 semester hours.

The advanced course covers more specialized work. In addition to discussion of special hazards, including occupational diseases, it is expected that students will, during the course of instruction, be doing advanced work in speaking and writing on safety subjects. There will be some laboratory work in connection with this course. The use of field instruments required for occupational disease studies will be thoroughly covered. Demonstration of visual and sound technique in the preparation of safety education material is also provided. The emphasis throughout will be on creative work.

Prerequisite: S 11-12.

Omitted 1951-52 and alternate years thereafter.

Management Mathematics

Management Mathematics (MM A-B). Two semesters. Non-credit.

The first semester (MM A) covers arithmetical operations and functions. Practical applications, drawn from the field of management, will be used to stress the use of fractions, proportion, and per cent. It will include the use of tables, the determination of squares and square roots, the location of decimal points, and a discussion of significant figures. Instruction and practice in the use of a slide rule will be included.

The second semester (MM B) will cover positive and negative numbers, algebraic symbolism, algebraic equations and operations, radicals, exponents, and the construction and interpretation of graphs. Problems will deal primarily with management applications.

Mathematics

Mathematics A-B. Two semesters work in one semester. (See note following Mathematics C-D.)

The work in algebra includes the fundamental operations of addition, subtraction, multiplication, and division, and applications of these operations to problems. Topics discussed include: factoring, fractions, and theory of equations. In plane geometry the concept of a proof is emphasized and applied, and the properties of the triangle are considered.

Mathematics C-D. Two semesters work in one semester. (See note below.)

During the term the fractional equation is studied and applied to more difficult problems; also systems of equations and the laws of exponents. Further work in algebra includes the following topics; the quadratic equation, ratio and proportion, variation, the trigonometry of the right triangle, and logarithms. In plane geometry the circle is discussed and studied, and consideration is given to similar figures and areas.

NOTE: Mathematics A-B and C-D offer no college credit; however, the financial charges and the time necessary to complete each course are the equivalent of two 2½ semester hour courses.

Mathematics (M 13). Trigonometry. Credit, 2½ semester hours.

This course is devoted entirely to the study of trigonometry. The topics studied include trigonometric functions, fundamental relations, solutions of right and oblique triangles, trigonometric reductions, angular measure, graphs of the functions, composite angles, inverse functions and logarithms.

Prerequisites: M C-D or equivalent.

Mathematics (M 14). Algebra, Analytic Geometry, Basic Calculus. Credit, 2½ semester hours.

The fundamental operations of algebra are thoroughly reviewed and various topics such as the fundamental concept, variation, synthetic division, complex numbers are studied. Special emphasis is placed on the solution of work problems. The analytic geometry of the straight line, circle and parabola are next considered. The last few weeks are devoted to the study of the limit concept and its application to the calculus. The differentiation and integration of the power function conclude the work.

Prerequisites: M C-D or equivalent.

Mathematics (M 21-22). Credit, 5 semester hours.

This course is entirely concerned with the calculus and its applications. The topics studied include the differentiation and integration of the power trigonometric exponential, logarithmic and inverse trigonometric functions. Applications using these functions are made to problems in physics and science. They include maxima and minima, differentials, rates, areas and volumes of revolution, length of arc, and moments of inertia.

Prerequisite: M 13-14.

Metallurgy

Non-ferrous Metallurgy (Mt 31-32). Credit, 5 semester hours.

The physical metallurgy of aluminum, magnesium, copper, nickel, zinc, lead, tin and their alloys is covered by lecture, discussion and laboratory work. Melting, alloying, casting, extruding, rolling, drawing, and heat treatment of the metals are studied with emphasis on the efforts of variables and reasons therefor. Typical mill and service difficulties are analyzed in light of the specific fundamental principles involved.

Prerequisite: Ch 21-22 or EM 26.

Omitted 1952-53 and alternate years thereafter.

Steels and Their Heat Treatment (Mt 41-42). Credit, 5 semester hours.

The course covers all grades of carbon and alloy steels used for press, structural, automotive, tool and die work, and in addition, cast irons as a supplementary or competitive material. The fundamentals, such as Fe-C phase diagram and transformation diagrams, grain size, and hardenability, are studied and then applied to a study of heat treatments including annealing, hardening, tempering, and carburizing. Equipment including protective atmospheres, liquid baths and induction heating are considered with a view of the particular fields of application. Laboratory work is supplemented by lectures and discussions.

Prerequisites: Ch 21-22 or EM 26 or EM 28.

Omitted 1951-52 and alternate years thereafter.

Office Supervision and Management

Office Organization and Management (OM 11-12). Credit, 5 semester hours.

This course considers the profession of office supervision and management by a study of the qualifications, responsibilities, and functions of the office manager. It deals with the organization of an office with respect to its personnel, physical layout, and equipment. The various departments of an office, such as filing, stenographic, credit, etc., are analyzed. The place and function of the office in the whole organization of the business is studied. Attention is given to costs and budgets.

Office Supervision and Management Seminar (OM 41-42). Credit, 5 semester hours.

This course is an opportunity to apply and summarize previous educational and practical training in the field of office management. Problems of contemporary and practical nature will be offered for solution. Reading, group discussion, and independent research and study will provide material for a written paper.

Prerequisites: 40 hours of college credit of which at least 25 must be selected from: Office Organization and Management, Psychology, Economics, Public Relations (may be taken concurrently), Personnel Administration, Fundamentals of Supervision, Modern Civilization.

Personnel Supervision

Methods and Costs (PS 21). Credit, 2½ semester hours.

A supervisor or foreman is responsible for methods and costs. Though the technical responsibility may lie with the methods and costs departments, the supervisor must get results through his personnel. This course treats not only the basic principles of work simplification and of the factors comprising cost, but considers the supervisor's problem of gaining personnel cooperation in the improvement of methods and the control of costs.

Prerequisite: IA 11-12. —Fall only.

Fundamentals of Supervision (PS 22). Credit, 2½ semester hours.

There can be no denial of the need for sound and mutually satisfactory relations between management levels. The position of the foreman in labor relations is a knotty phase of the situation. The development of scientific management has created some line and staff conflict. Such problems are considered in this course. Beginning with a study of faults in organization, the course will continue with the conference determination of the responsibilities and authority of members of management at the supervisory level. It will consider factors in the selection and training of supervisors for leadership, the supervisor's working relations, and his facilities for consultation and communication, ending with the determination of guiding principles for supervisors as members of management.

Prerequisites: IA 11-12 or OM 11-12. —Spring only

Personnel Administration (PS 23-24). Credit, 5 semester hours.

The aim of this course is to provide a foundation in fundamental concepts and a general knowledge of techniques in the administration of personnel relations. Whether the student approaches the subject from the point of view of the line supervisor, staff or office man, or union leader, he should get from it an appreciation of common objectives in the determination and administration of personnel policy.

In the treatment of basic concepts the course will cover such subjects as the principles of personal adjustment, the social organization of business, motivation and incentives, employee attitudes and morale. Such techniques of personnel administration as interviewing, job analysis, appraisal and placement, training, merit rating, employee relations, and wage administration will be dealt with, not from the standpoint of training technicians in specific techniques, but to secure a breadth and depth in the approach to personnel problems.

Prerequisites: IA 11-12 or OM 11-12 and P 23-24.

Management-Labor Relations (PS 41). Credit, 2½ semester hours.

This course aims to present the problems involved in the relations of management and labor. It begins with a history of the labor movement, then considers the intervention of government in labor relations, and explains the legal framework within which plant practices evolve. The discussion of current practices in negotiation, in grievance handling, and in the settlement of disputes is designed to bring out a point of view which may contribute to a greater stability in relations. When possible, guest speakers will contribute to the establishment of that point of view.

Prerequisite: PS 23-24. (May be taken concurrently.) —Fall only.

Omitted 1951-52 and alternate years thereafter.

Conference Leadership (PS 42). Credit, 2½ semester hours.

This course is designed to accomplish two main objectives: (1) study in the principles and problems peculiar to conducting business conferences, training conferences, or union-management discussion and (2) practice in conference leadership. Original and creative work is required in the subject matter of the practice conferences. The student may meet this requirement by the completion of a research project in some area of his previous study, or by submitting adequate conference plans based upon practical experience and research on his job.

Prerequisite: PS 41, or permission of the division chairman. —Spring only.

Omitted 1951-52 and alternate years thereafter.

Philosophy

Philosophy (Phil 11). Credit, 2½ semester hours.

An introduction to reflective thinking on such central issues of human life as man's place in the universe, how we discover truth, the nature of beauty and the good, and the basis of moral choices. Ideas of a few major philosophers from Plato to Dewey will be presented. Stimulation of individual clear thinking upon life's most vital problem will be emphasized in discussion. —Fall only.

Physical Education

Physical Education—Cooperative Program (PE 11C-12C). Non-credit.

A varied physical training and recreational program including activities in the gym and swimming pool; games for fun and skill; training for the improvement of leisure sports and exercise; acquaintance with various sports and games requiring some proficiency. Satisfactory completion of this program is required for graduation.

Physics

Engineering Physics (Ph 11-12). Credit, 5 semester hours.

This is a basic course in physics for technical students with laboratory, lectures, and demonstrations. Particular attention is paid to the basic principles of physics including mechanics, motion, velocity, acceleration, electricity, heat, etc. The course also stresses use of the slide rule, applied mathematics and graphical methods of presentation and analysis. Designed to orient the student to the engineering profession, the course aims to develop the habit of using correct methods of thinking and analysis in the solution of engineering problems.

Prerequisite: M C-D, or equivalent; Ph 11 is prerequisite to Ph 12.

Thermodynamics and Heat Power (Ph 32-33). Credit, 5 semester hours.

This course begins with a study of thermodynamics which covers the first and second laws of thermodynamics and their applications to general type problems. With this ground work established, the course proceeds to deal with the various industrial applications of this work such as: fans, blowers, pumps, flow systems, refrigeration, and air conditioning, and elements of steam power. A treatment of heat transfer concludes the course.

Prerequisites: Ph 11-12, M 21-22.

Omitted 1951-52 and alternate years thereafter.

Political Science

Political Science—Cooperative Program (Pol Sc. 21C-22C). Credit, 5 semester hours.

This course deals with the structure and functions of the national government, party organization, national and state relations, and American politics as compared to other countries and the trends in modern politics.

Psychology

Orientation—Cooperative Program (P 11C-12C). Non-credit.

This is essentially a group guidance activity through which students are assisted in 1) making the most satisfactory adjustment to college life and study, and 2) establishing intelligent long-range vocational goals for themselves.

The first part of the course is concerned with establishing the meaning and purpose of the college program, with study techniques, and with getting along with others. Later the student sees his abilities, aptitudes, interests and personality characteristics; studies occupational fields, and is assisted in using this information to arrive at realistic and intelligent goals for himself.

Psychology (P 23-24). Credit, 5 semester hours.

This course is designed to give the student a general knowledge of the important principles of human behavior. Topics included are: motivation, emotion, learning, personality, intelligence, etc. The utilization of psychological knowledge in relation to everyday human activities will be emphasized.

Psychology—Cooperative Program (P 13C-14C). Credit, 5 semester hours.

Same as P 23-24 described above.

Applied Psychology—Cooperative Program (P 25C-26C). Credit, 5 semester hours.

This course is concerned with 1) applying psychological knowledge and principles to the problems of the individual's adjustment and mental health; and 2) understanding the psychological aspects of social institutions such as the family, industry and education; and social phenomena such as propaganda and public opinion.

Mental Hygiene (P 27). Non credit.

This course is concerned with (1) the emotional problems and reactions to conflict which arise in everyday family interrelationships between adults, between parents and children, and among children; (2) the human needs for freedom and self expression. Presentation is by lecture which includes much illustrative case material.

Sales and Marketing

Principles of Selling (SM 11-12). Credit, 5 semester hours.

The purpose of this course is to present definite techniques and basic principles of selling. This will include the study of: prospect selection, knowledge of the product, pre-approach and approach, demonstration, meeting objections, close and departure. Desirable personality traits of the salesmen are considered. The organization of the Sales Department and its place in the whole business organization are studied. There is a treatment of basic principles of sales management including: selection of salesmen, sales training programs, and policies. Each student will have opportunities to demonstrate his ability to sell a given product by means of class demonstration.

Marketing and Market Analysis (SM 23-24). Credit, 5 semester hours.

A study of the distribution and flow of goods or services from producers or sellers to consumers or buyers through various trade channels, including the marketing of farm and industrial products, raw materials, and consumer goods. Government controls, transportation, risk bearing, storage, and warehousing are carefully analyzed. Techniques and methods of market analysis are studied by considering basic types of analyses. The assembling of data and the application of results to the sales program or company are evaluated.

Advertising and Sales Promotion (SM 33-34). Credit, 5 semester hours.

The fundamental approach to advertising and sales promotion. Psychology of advertising, its economic significance, and an analysis of typical situations encountered by management in the use of advertising. Deals with the general field of advertising and sales promotion, the fundamentals of copy writing, layout, color and typography, display techniques, merchandising methods and material, selection of media, use of agency and direct advertising, methods of evaluating advertising results, together with the merchandising or capitalization of advertising through sales promotion.

Sales Administration & Management (SM 41-42). Credit, 5 semester hours.

Consideration is given to practical sales management and the Sales Manager's duties and responsibilities in relation to other departments. Methods of correlating sales, marketing and merchandising functions, and organized structure. Trade distribution channels, sales policies, agency or franchise selling, stock turnover, fair trade, together with the comparison of nationally advertised brand selling with other types. Personnel selection, sales training, morale building, compensation, work loads, and selling tools and equipment, as well as budgets, methods of supervision and evaluation.

Prerequisite: SM 11-12, SM 23-24, SM 33-34 (SM 33-34 may be taken concurrently).

Science

Modern Science (Sc 11-12). Credit, 5 semester hours.

This course is designed to give the student a knowledge of the physical sciences and of scientific method. It is not a laboratory course, but will deal with primary source material. Its aim is to emphasize the use of the scientific approach to all problems, and at the same time, to enable the student to appreciate fully the impressive impact of science upon his life.

Biological Science—Cooperative Program (Sc 13C-14C). Credit, 5 semester hours.

The purpose of this course is to teach what the biological sciences can contribute to the students' general understanding of himself and of the world. A study of life processes, fundamental structures, and a brief introduction to some of the principles of chemistry and physics upon which the biological sciences rest, is followed by surveys of the plant and animal kingdoms and more detailed consideration of mankind.

Physical Science—Cooperative Program (Sc 21C-22C). Credit, 5 semester hours.

A survey of the methods of science and the place of physical science in our modern world. The material covered is taken from astronomy, physics, chemistry and geology, with the emphasis on the unity of physical science as a field of knowledge. The aim of the course is to develop a scientific attitude of mind and to provide a summary for the student of man's knowledge about the world in which he lives.

Sociology

Modern Civilization (Soc 13-14). Credit, 5 semester hours.

The aim of this course is a critical survey, rather than a descriptive analysis, of the cultural, economic, and political problems of modern society. Attention will be given to the conflicting philosophies of communism, fascism, and democracy. The course will critically analyze present day institutions and problems. It will survey social trends, and will examine the underlying philosophies as well as possible solutions of these present day problems.

Sociology—Cooperative Program (Soc 15C-16C). Credit, 5 semester hours.

The aim of this course is to provide the student with an understanding and appreciation of the major institutions which form the structure of American society and their interaction upon each other. Particular attention is devoted to the impact of the dominant institution—our industrial capitalistic economy—upon all other aspects of our life—family structure, political organization, religion, etc. During the second semester opportunity is given to the student to explore in greater detail some phase of the subject which is of particular interest to him.

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Industrial Accounting
Office Supervision and Management
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Electrical Power Engineering
Electrical Communication Engineering
Industrial Electronics
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